

2002130-01143001

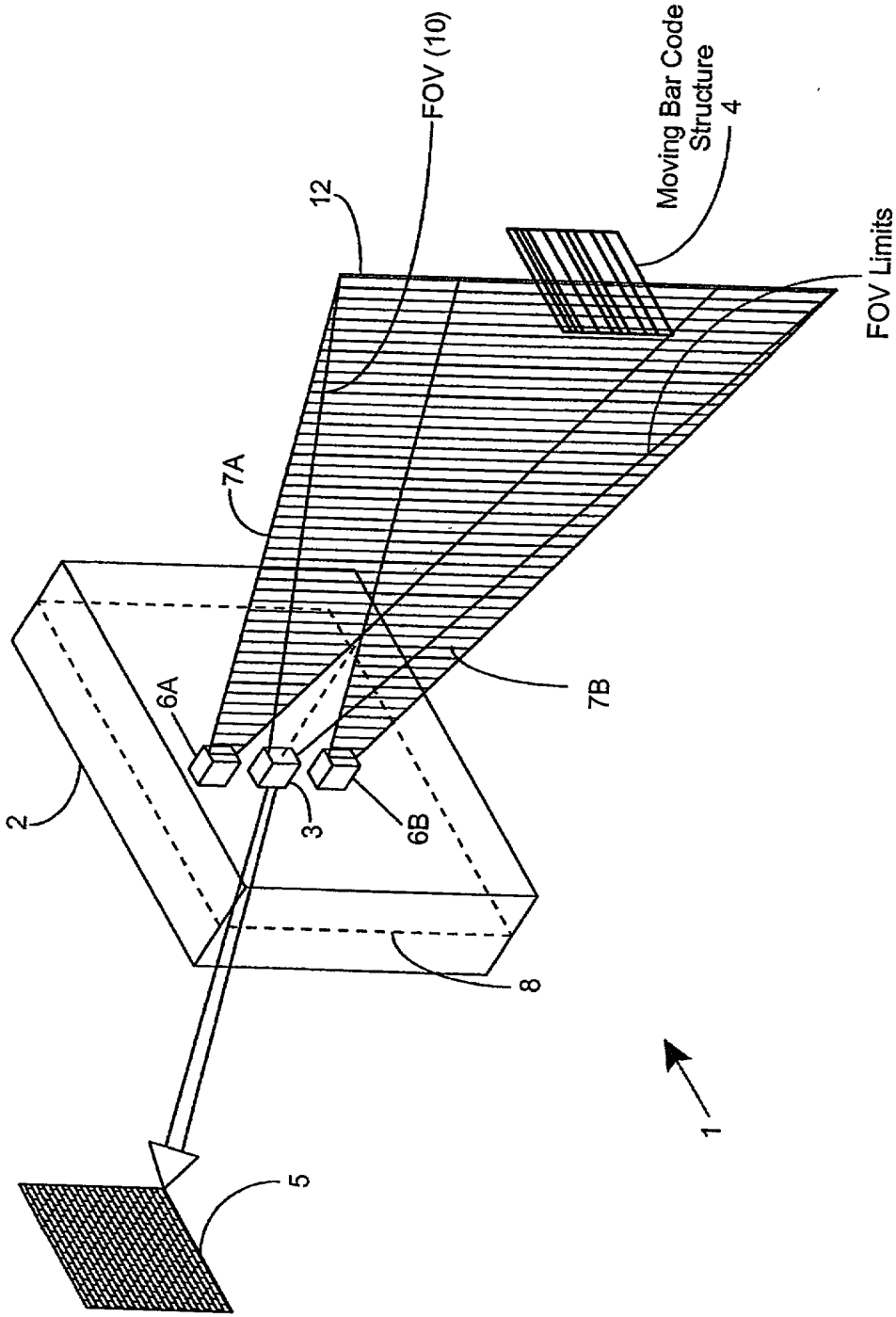


FIG. 1A

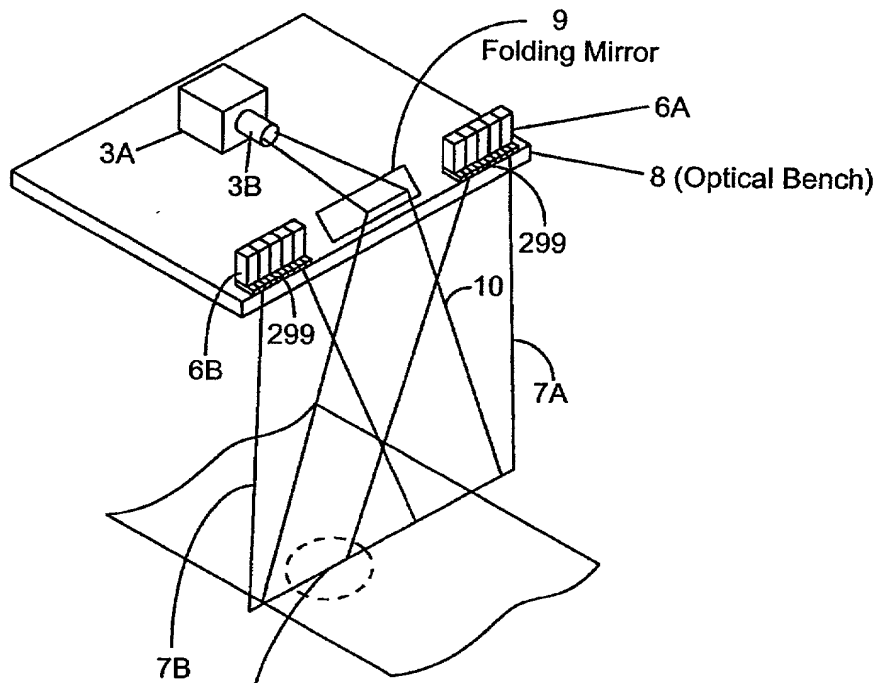


FIG. 1B1

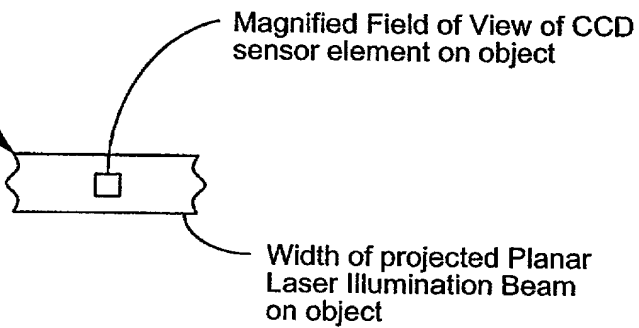
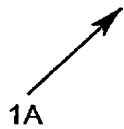
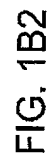


FIG. 1B3

20020812-04123001



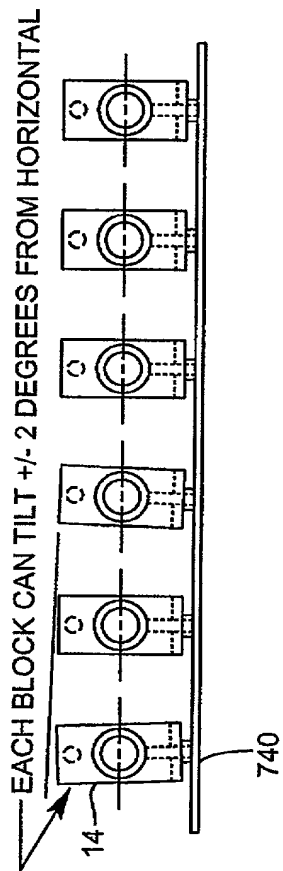


FIG. 1B4

VLD BLOCK CAN PITCH FORWARD FOR ALIGNMENT WITH OTHER VLD BEAMS

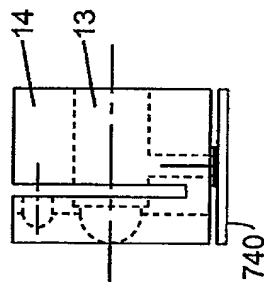
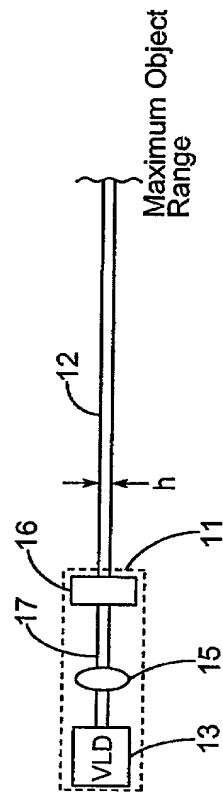
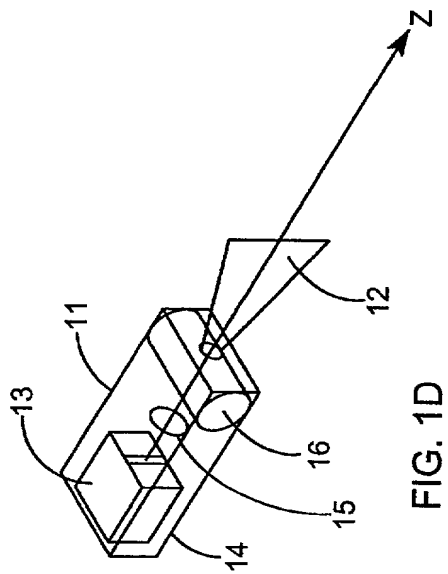
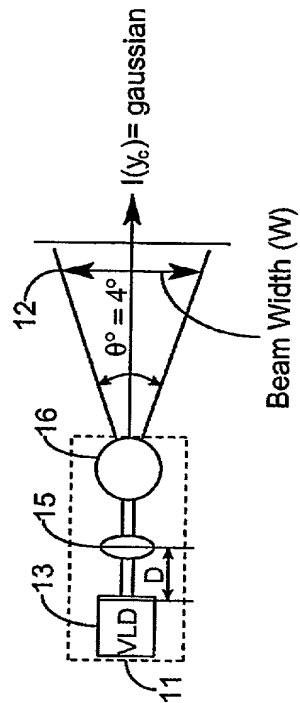
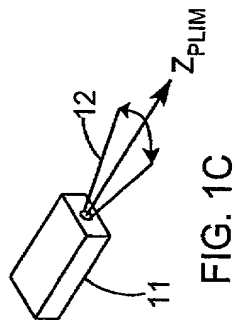


FIG. 1B5



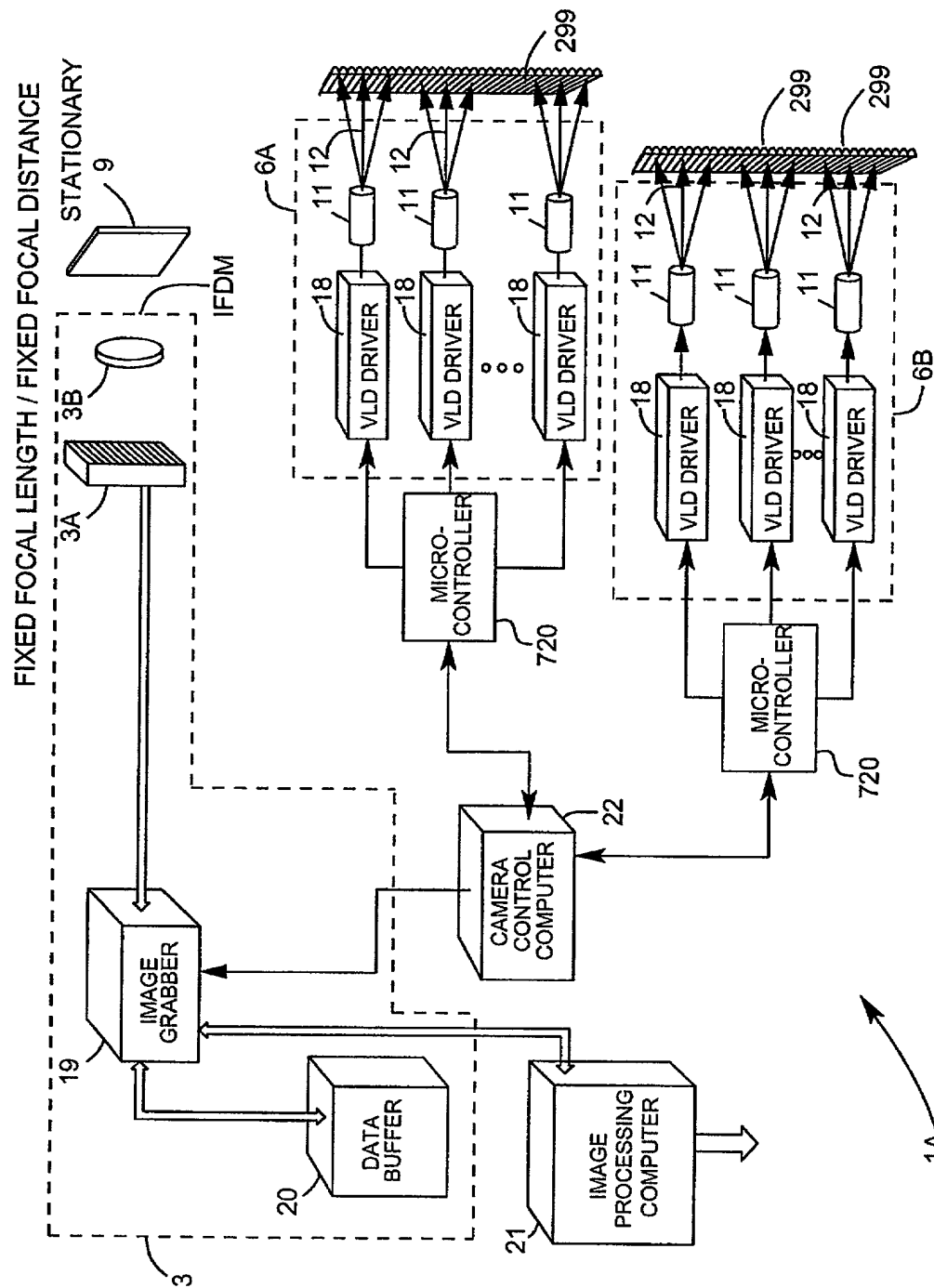


FIG. 1F

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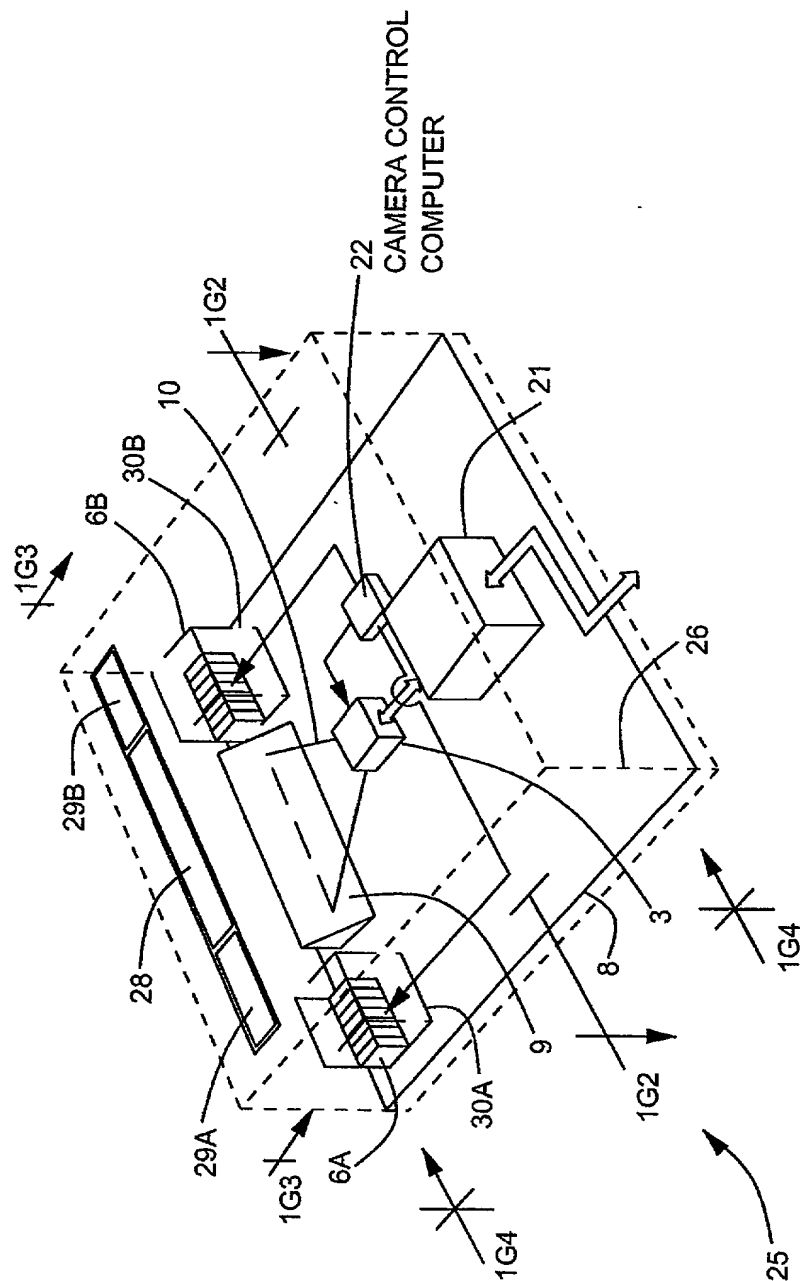


FIG. 1G1

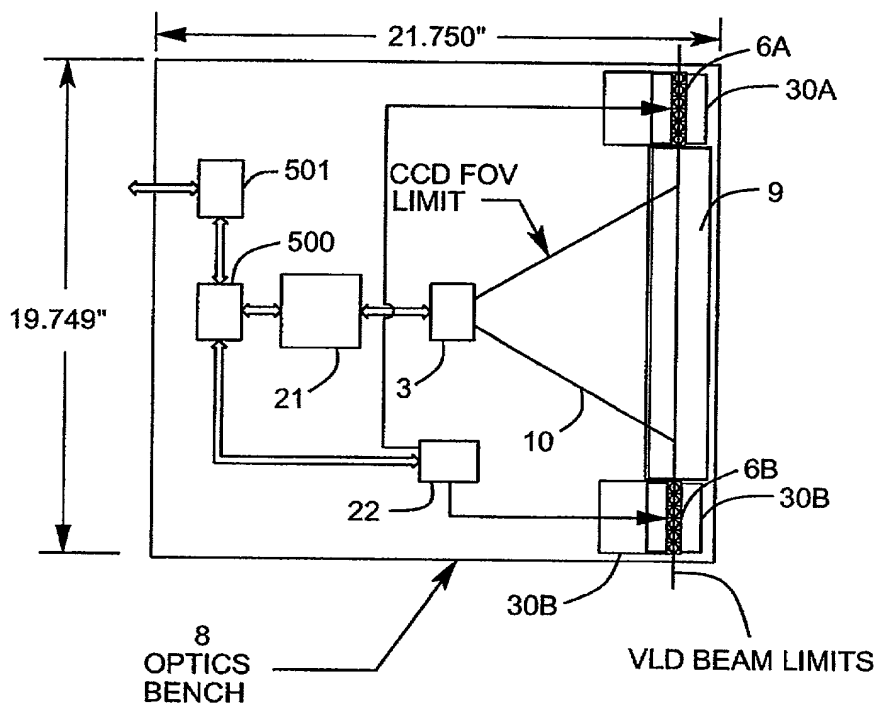


FIG. 1G2

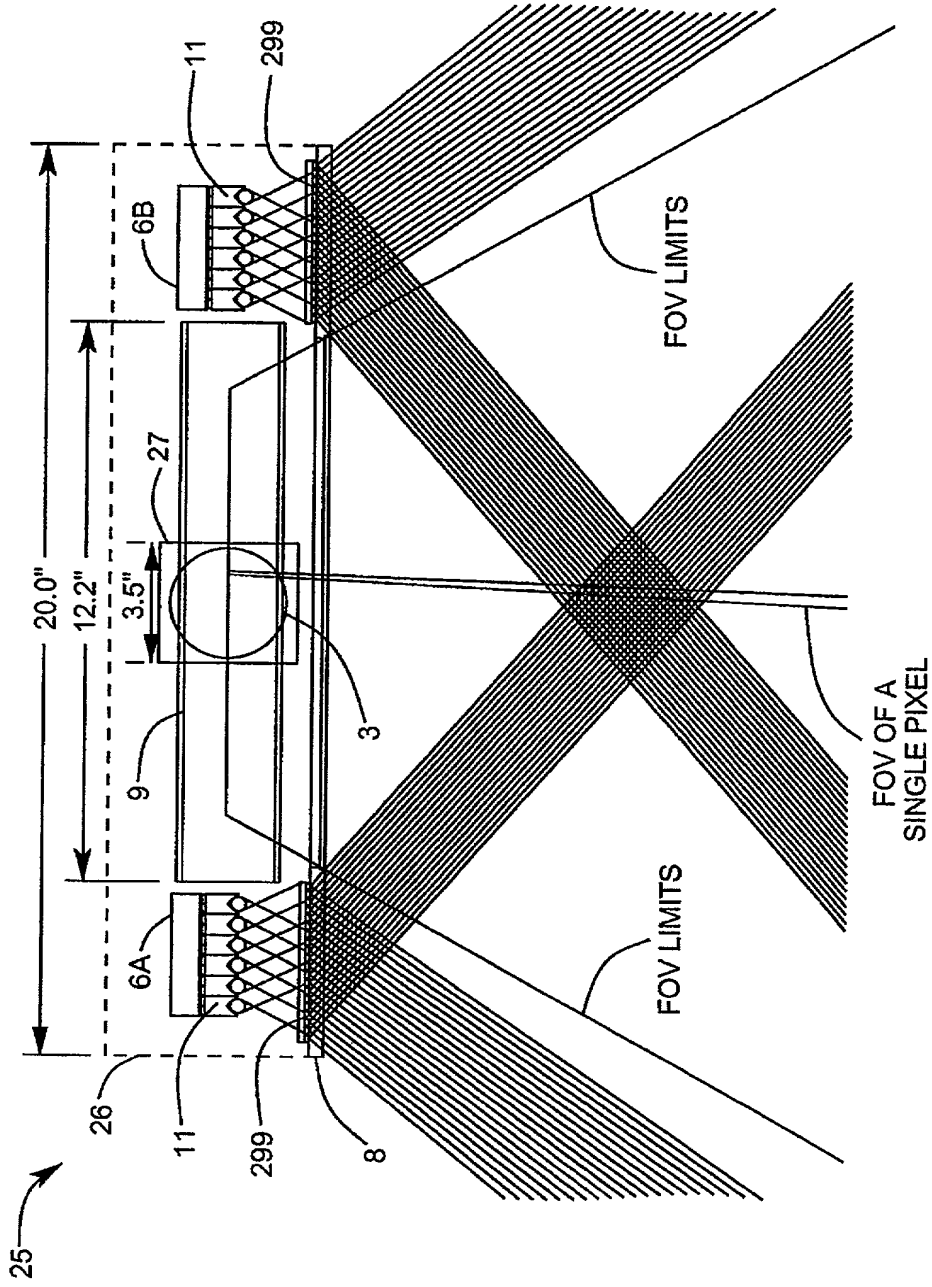


FIG. 1G3

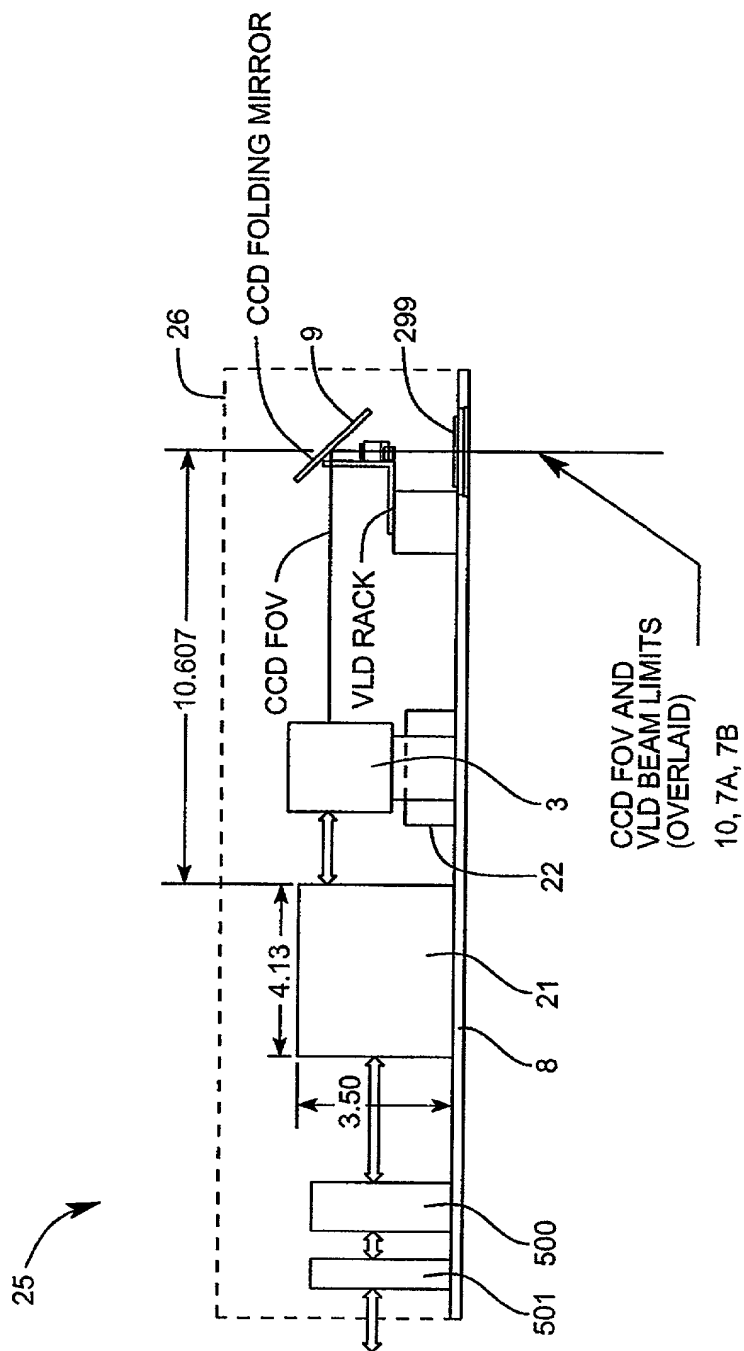


FIG. 1G4

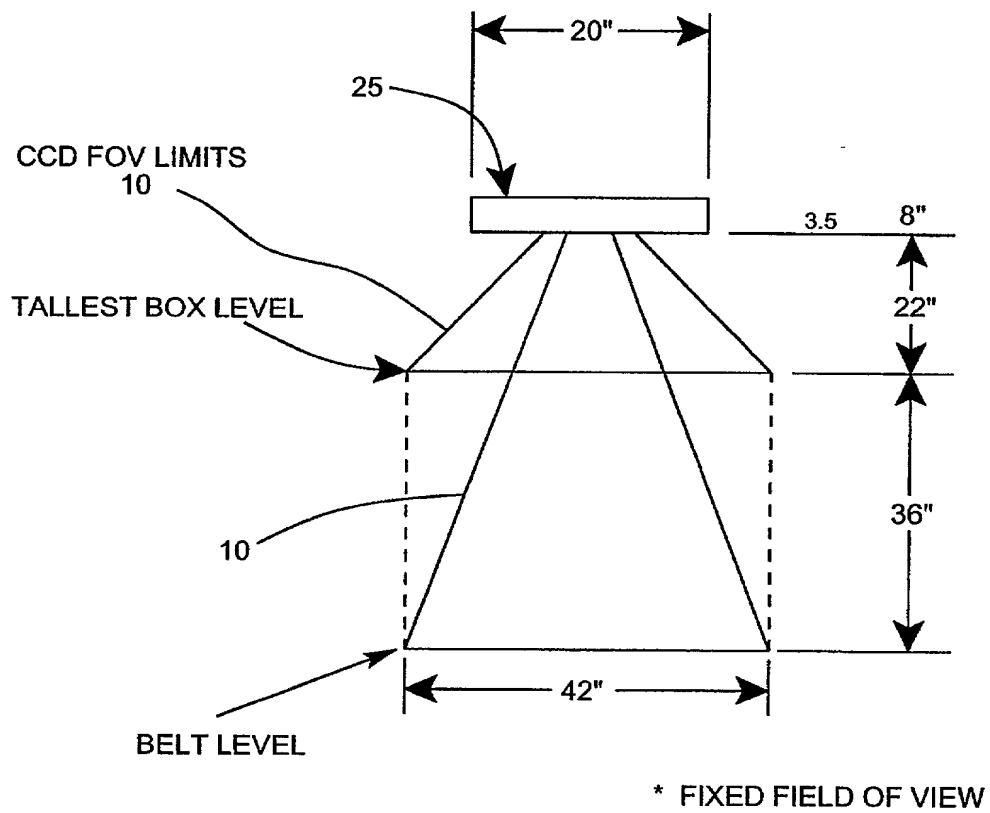
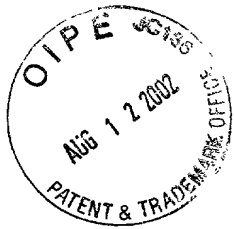


FIG. 1G5

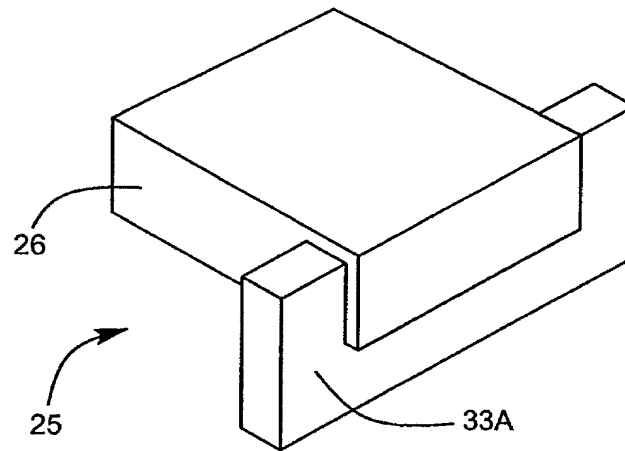


FIG. 1G6

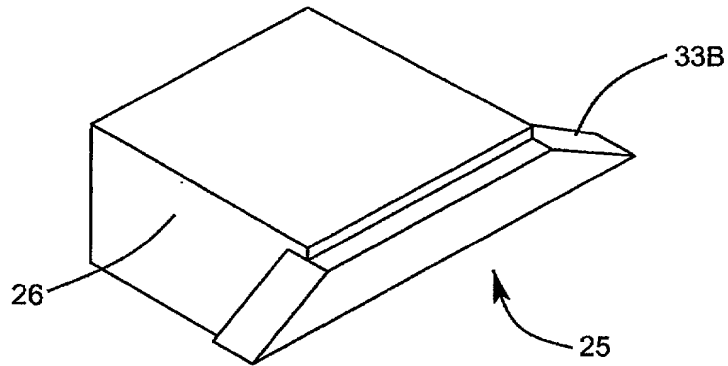


FIG. 1G7

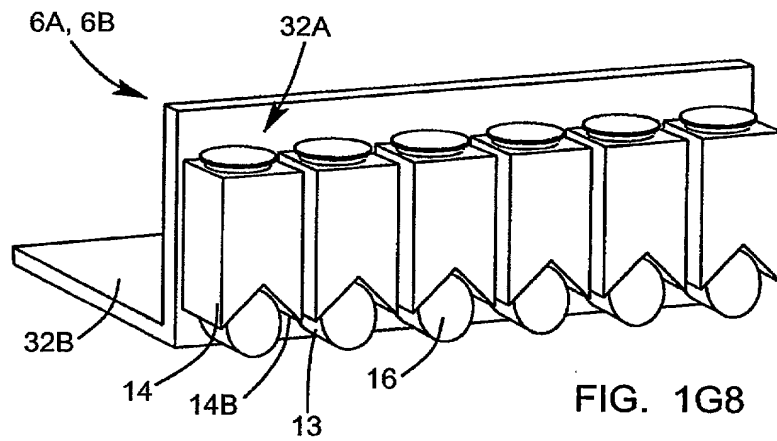


FIG. 1G8

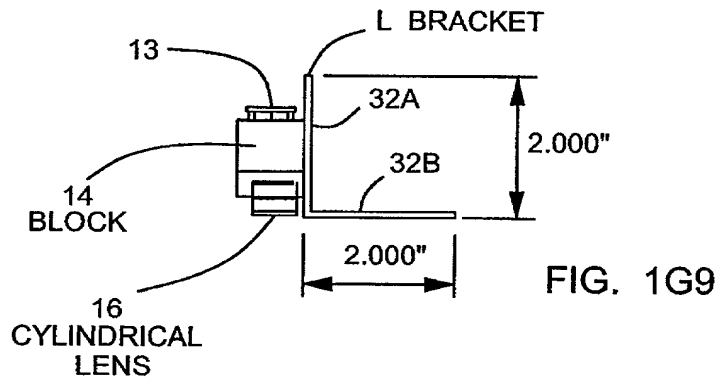


FIG. 1G9

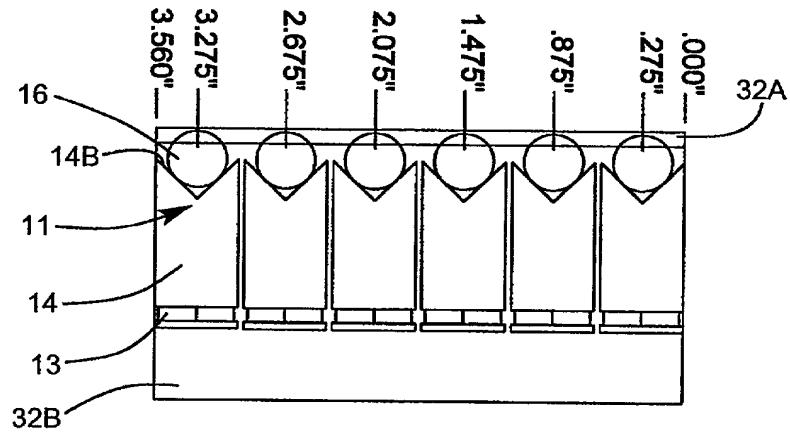


FIG. 1G10

10067140-001202

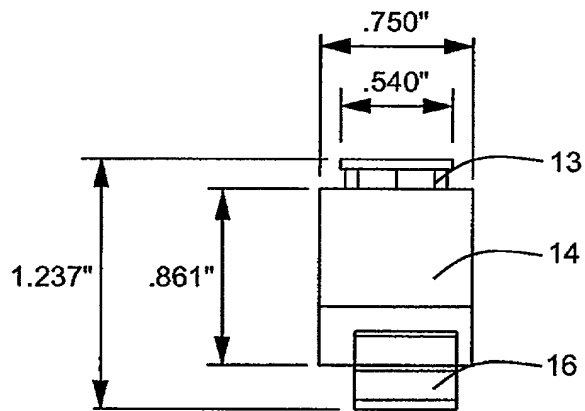


FIG. 1G11

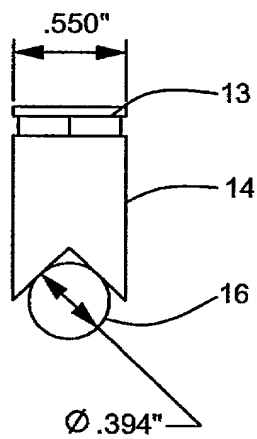


FIG. 1G12

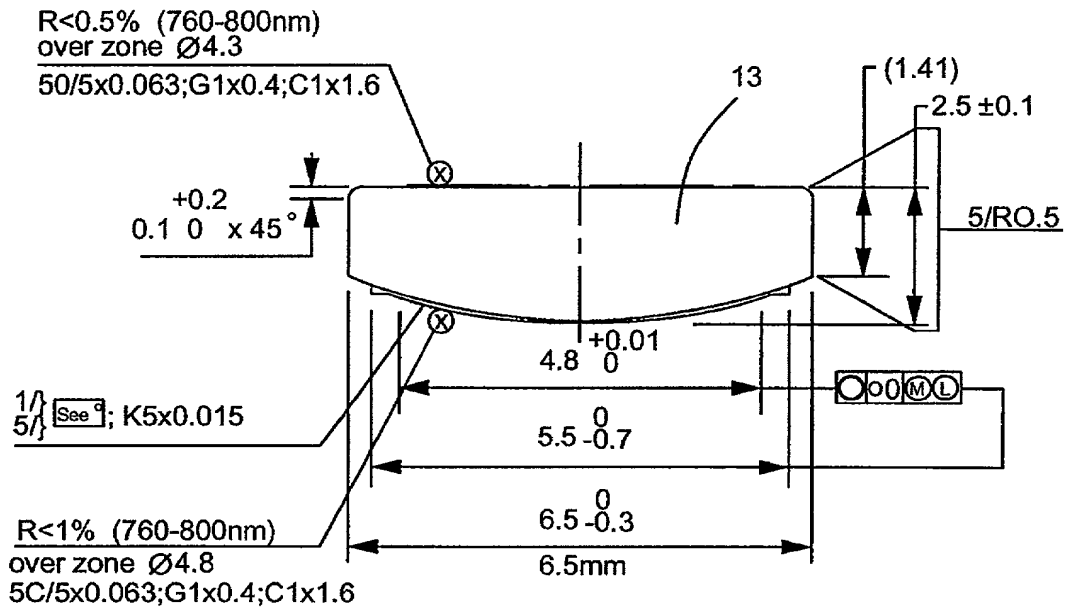


FIG. 1G13

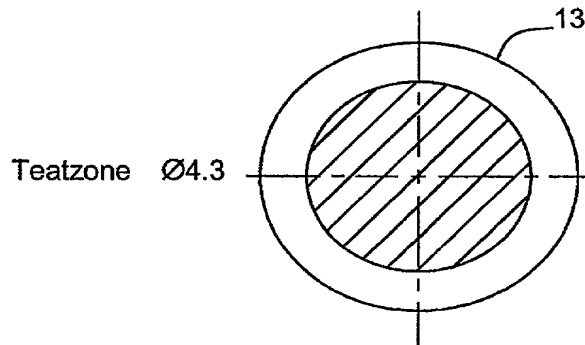


FIG. 1G14

202480-01120001

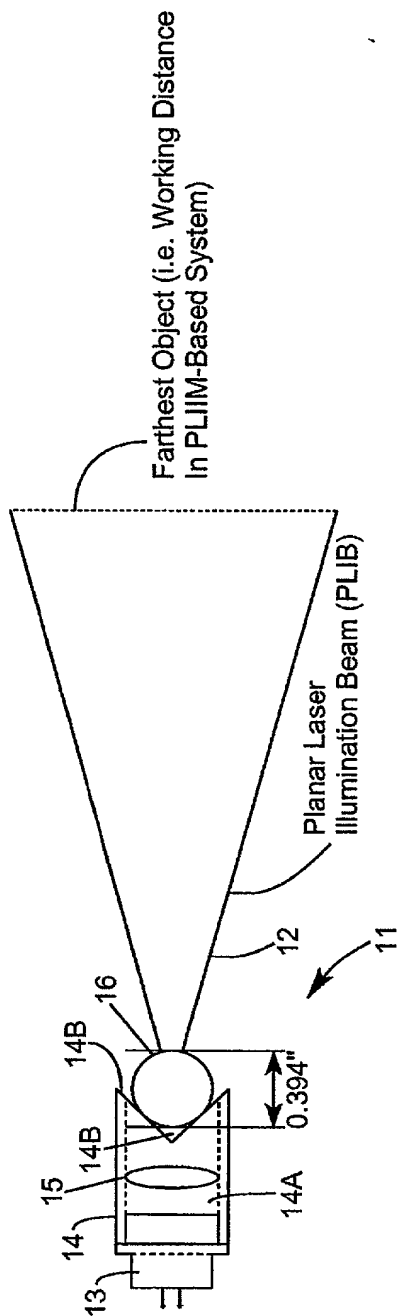


FIG. 1G15A

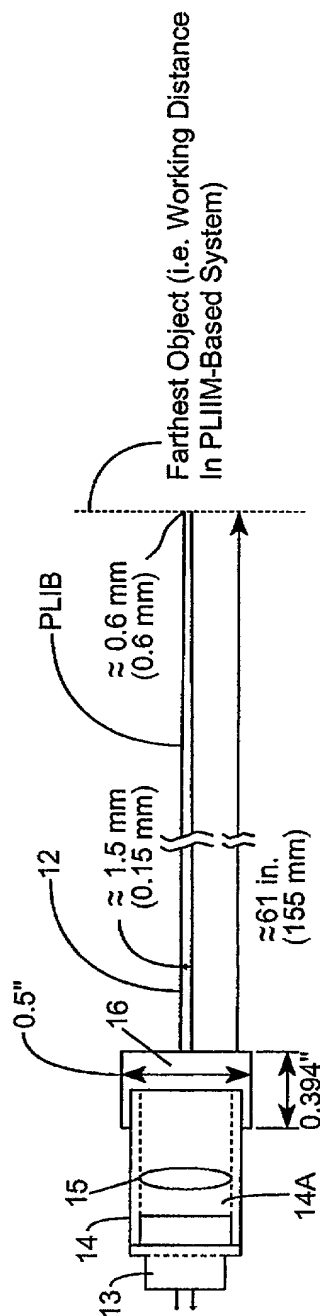


FIG. 1G15B

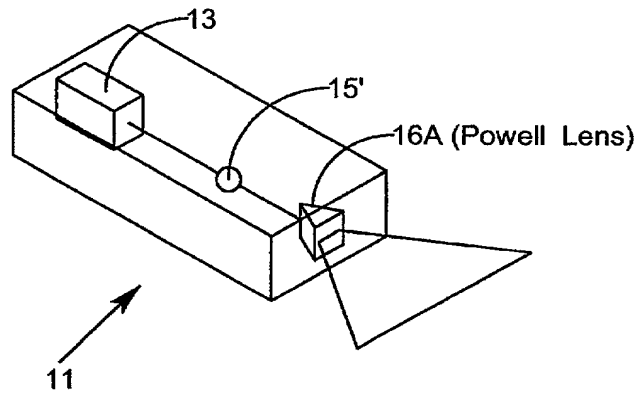


FIG. 1G16A

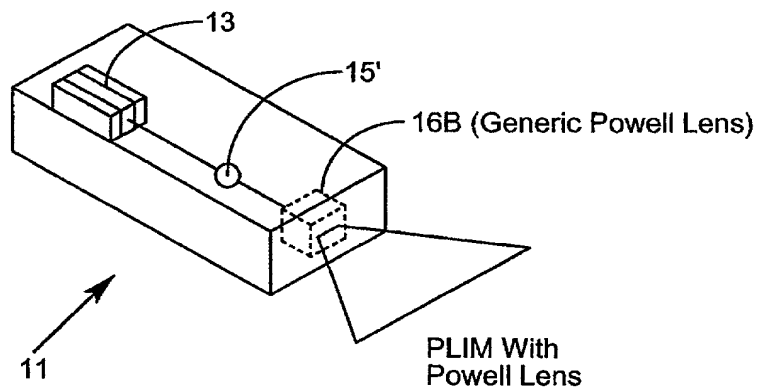


FIG. 1G16B

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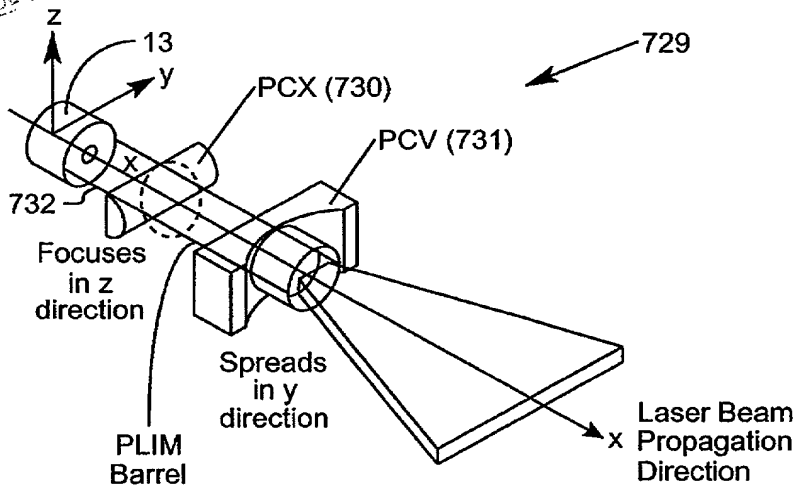


FIG. 1G17A

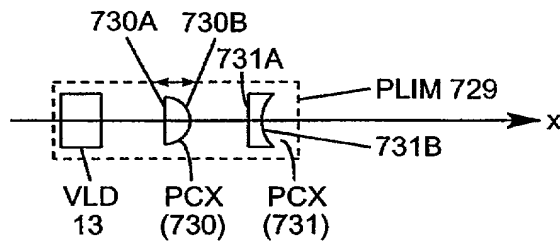


FIG. 1G17B

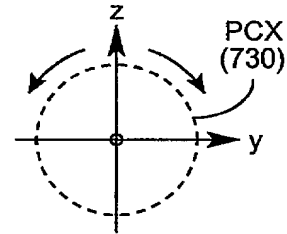


FIG. 1G17C

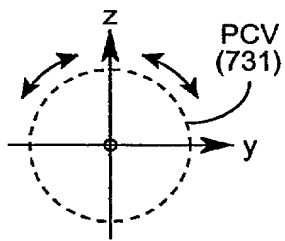


FIG. 1G17D

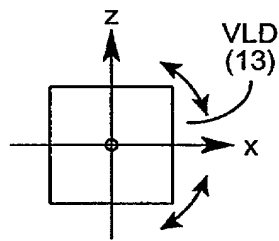


FIG. 1G17E

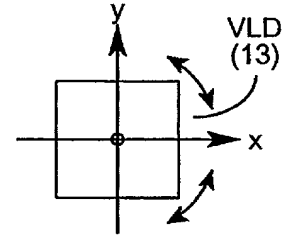


FIG. 1G17F

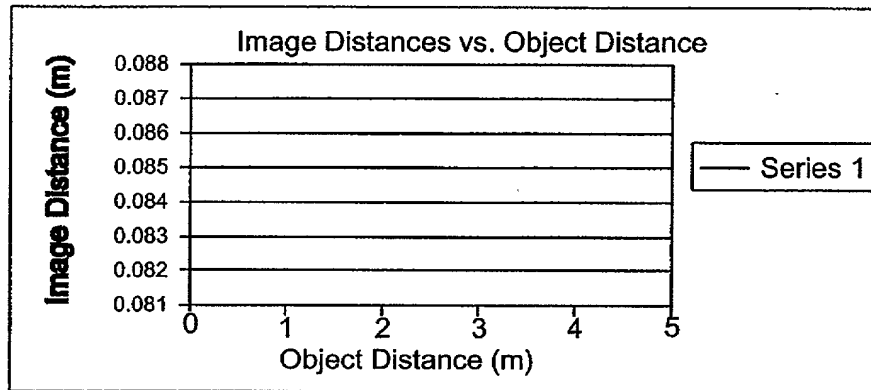


FIG. 1H3

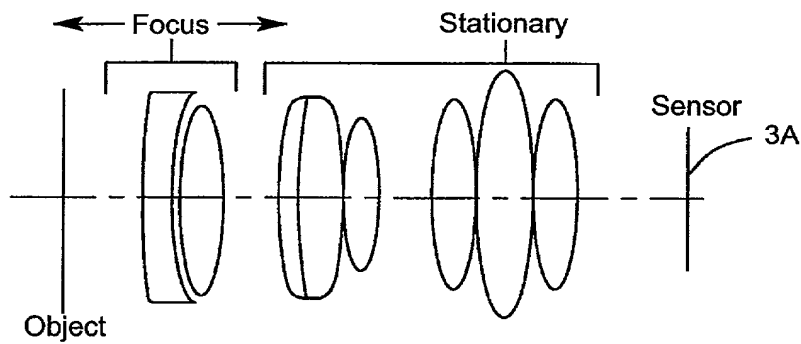


FIG. 1H4

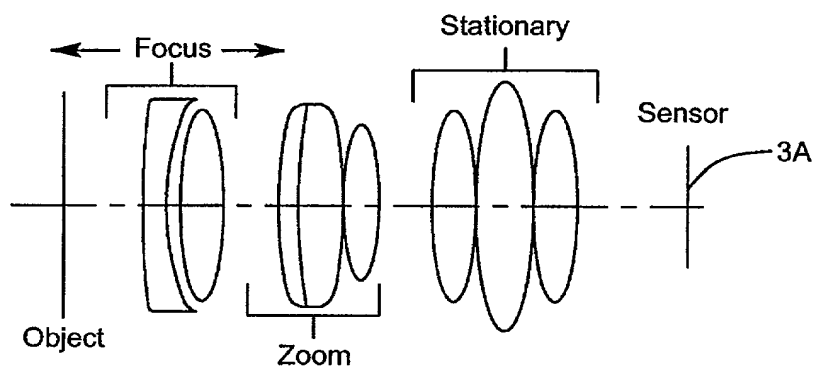


FIG. 1H5

2007000412001

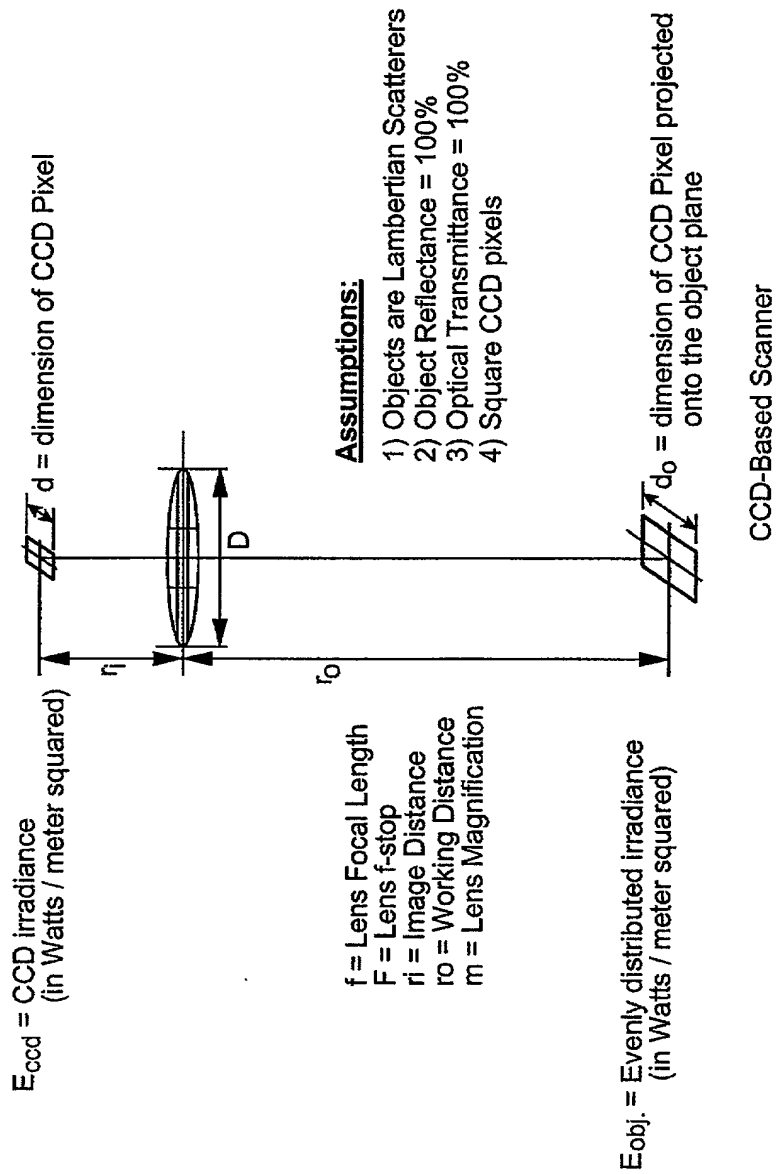


FIG. 1H6



FIRST GENERALIZED METHOD OF REDUCING
SPECKLE-NOISE PATTERNS AT IMAGE DETECTION
ARRAY OF THE IFD SUBSYSTEM (3)

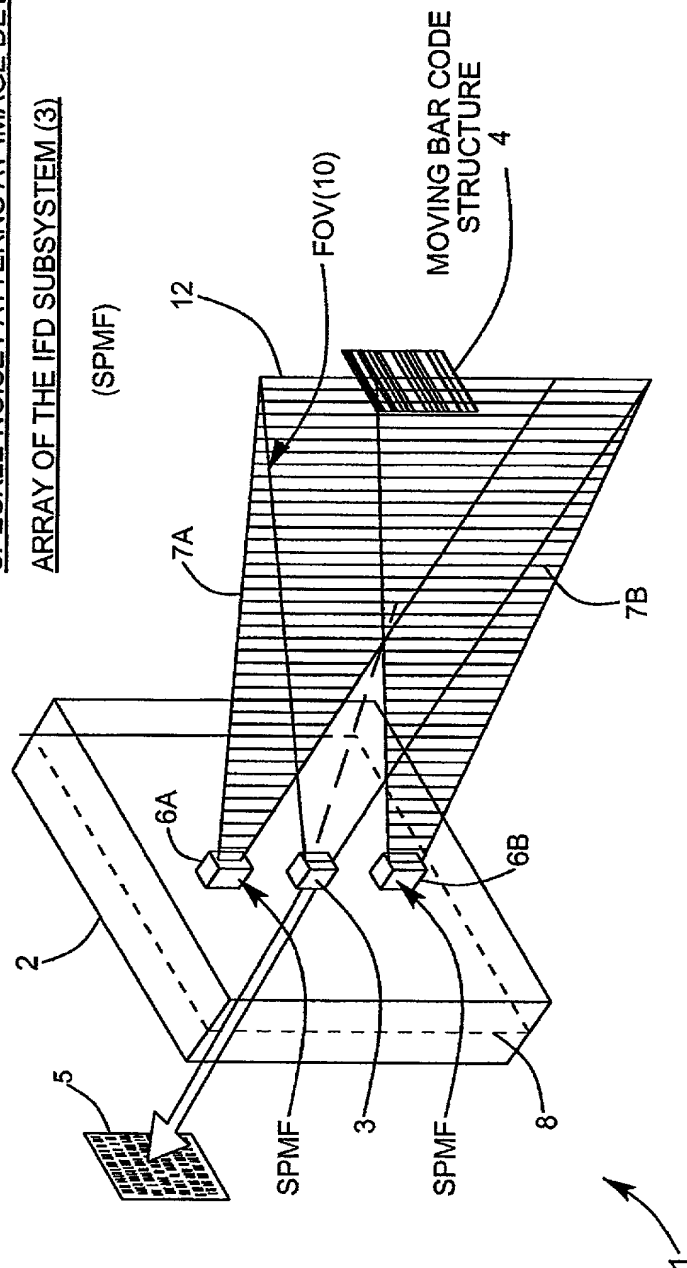


FIG. 111

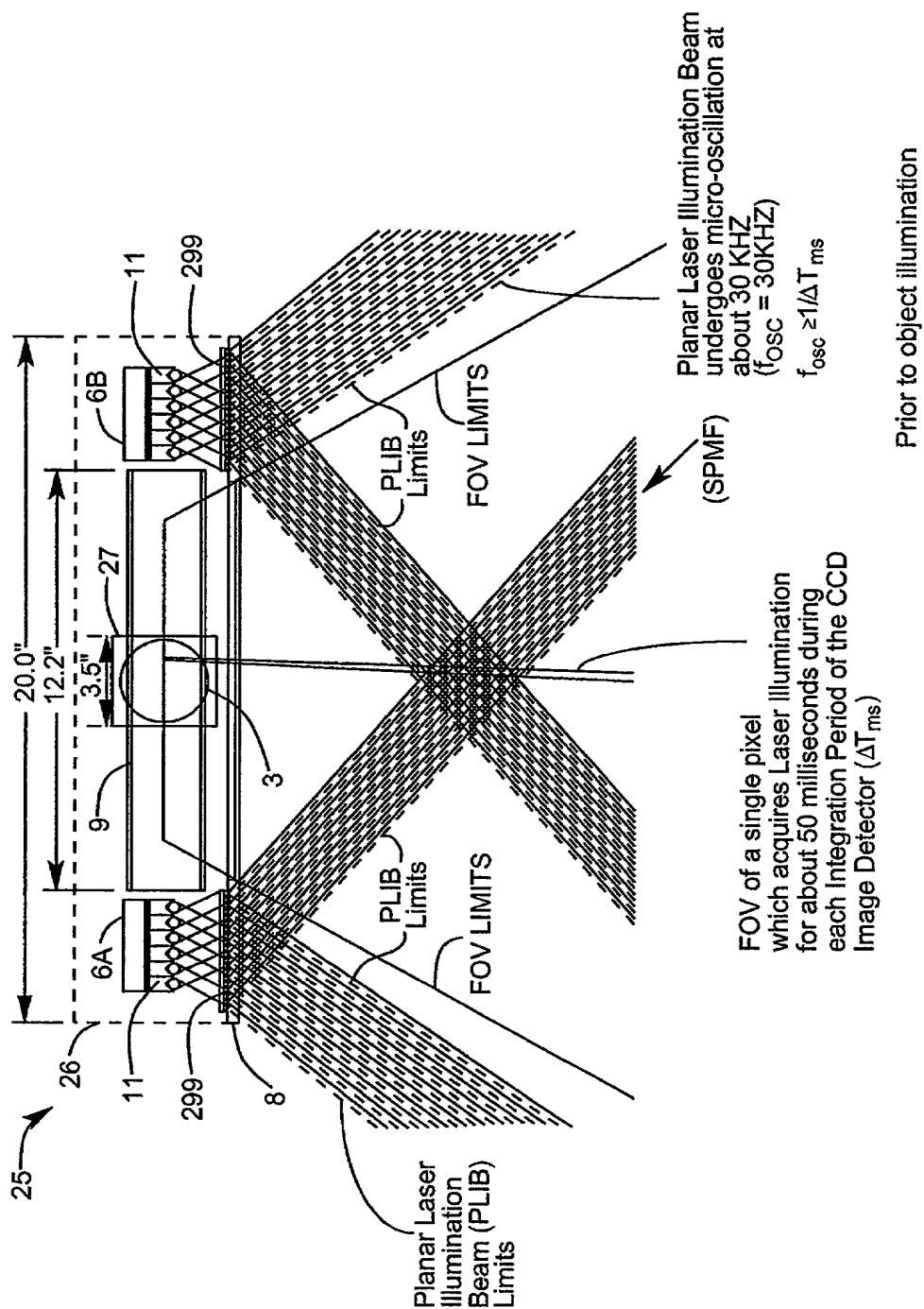


FIG. 112A



THE FIRST GENERALIZED SPECKLE-NOISE PATTERN REDUCTION
METHOD OF THE PRESENT INVENTION

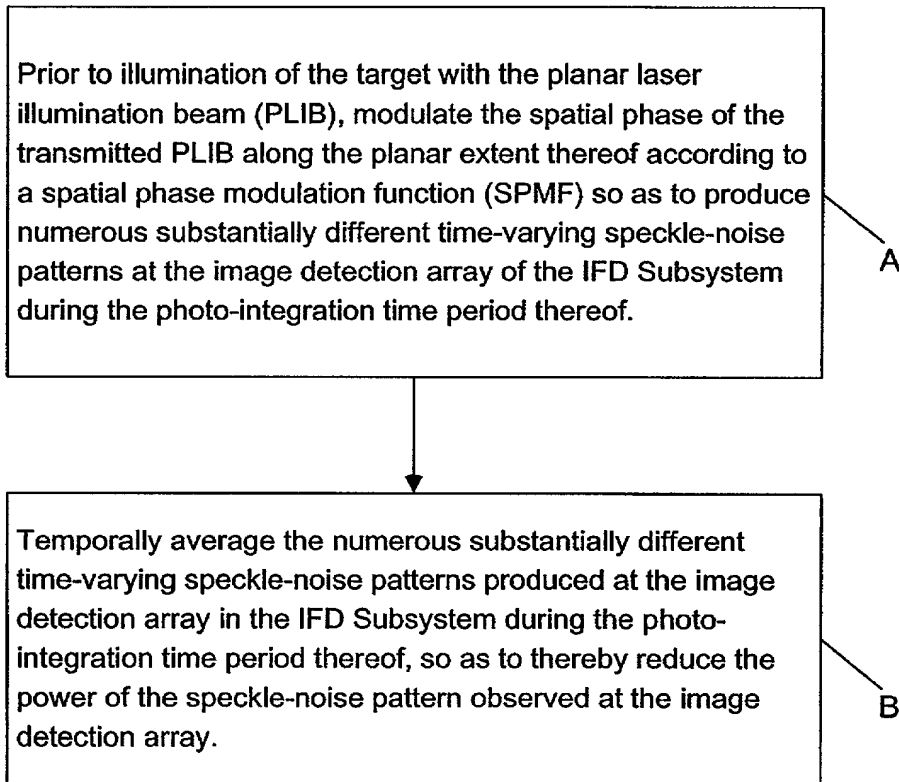
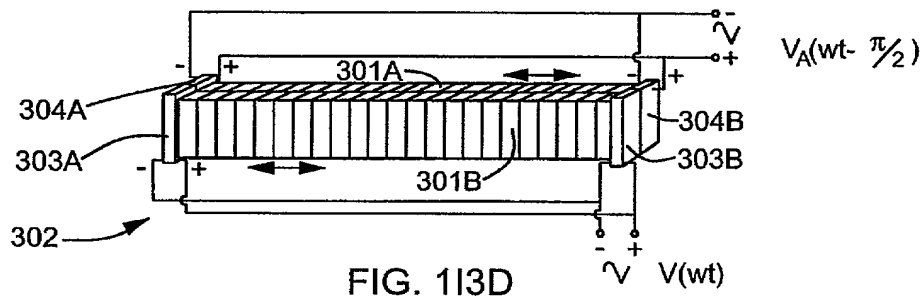
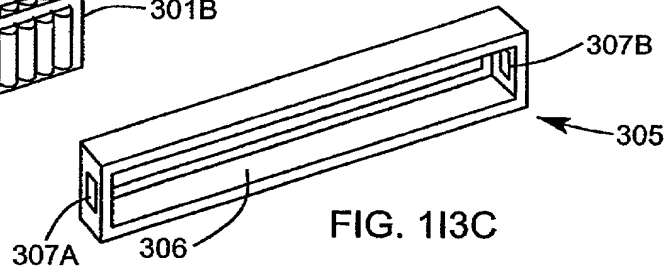
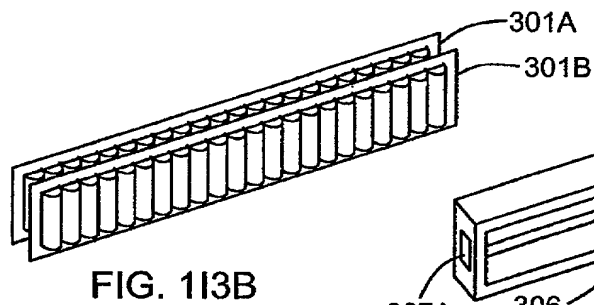
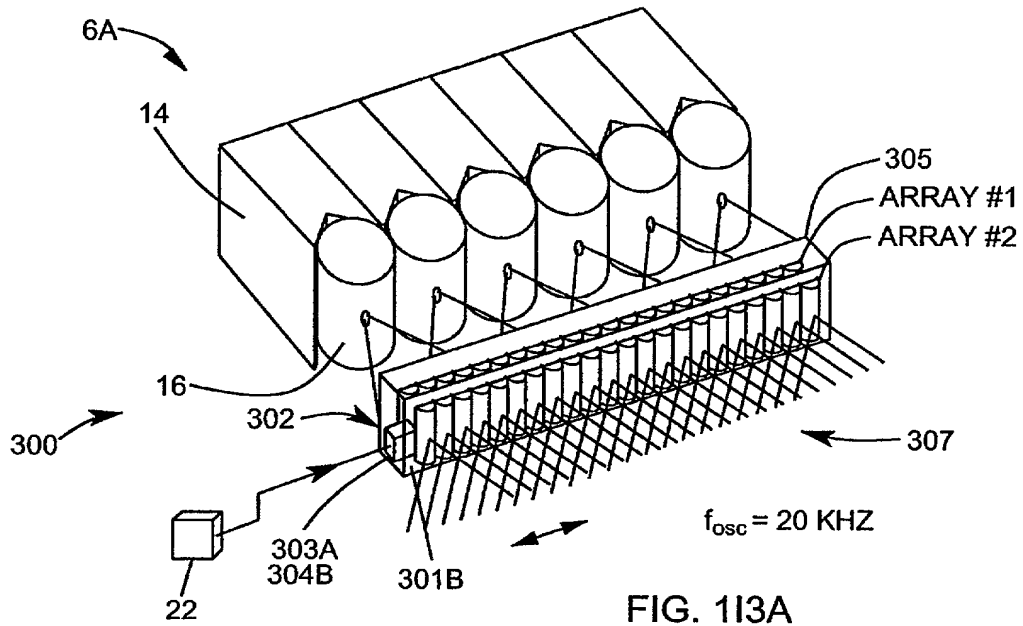
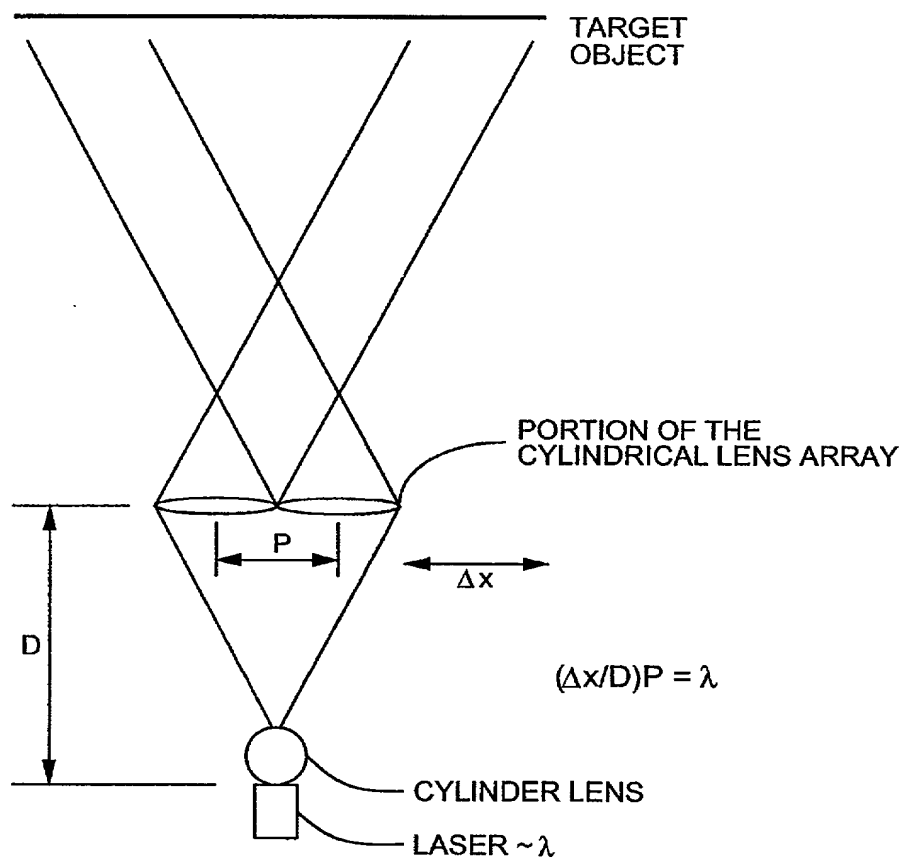


FIG. 112B

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2021200-04129001



$$\Delta x \geq \frac{\lambda \cdot D}{P}$$

FIG. 113E

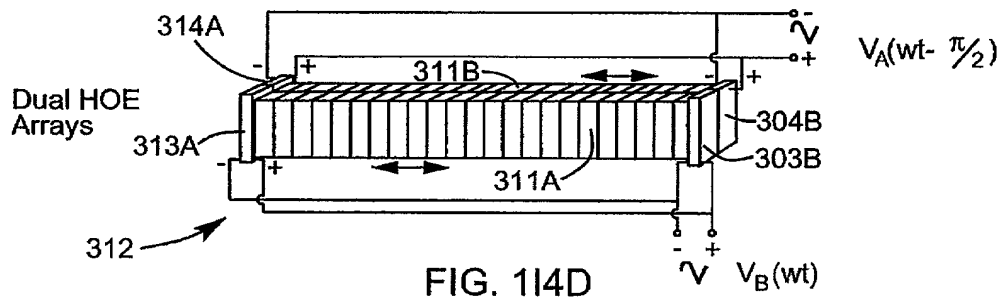
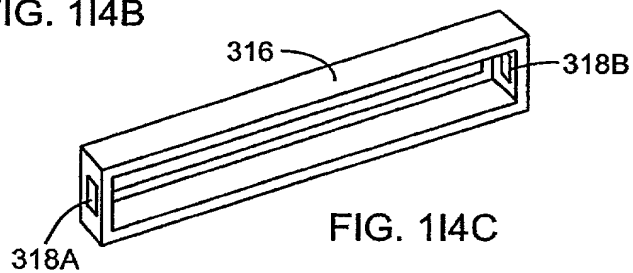
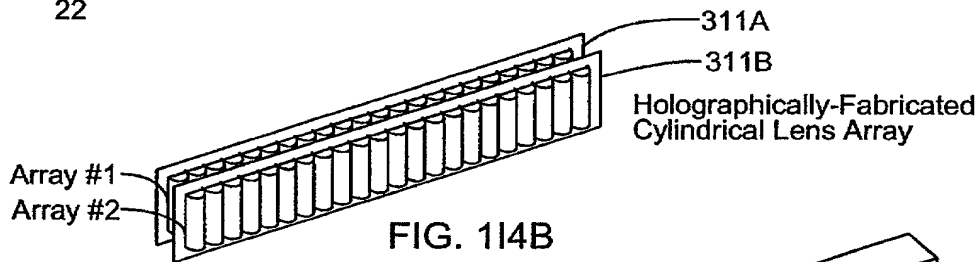
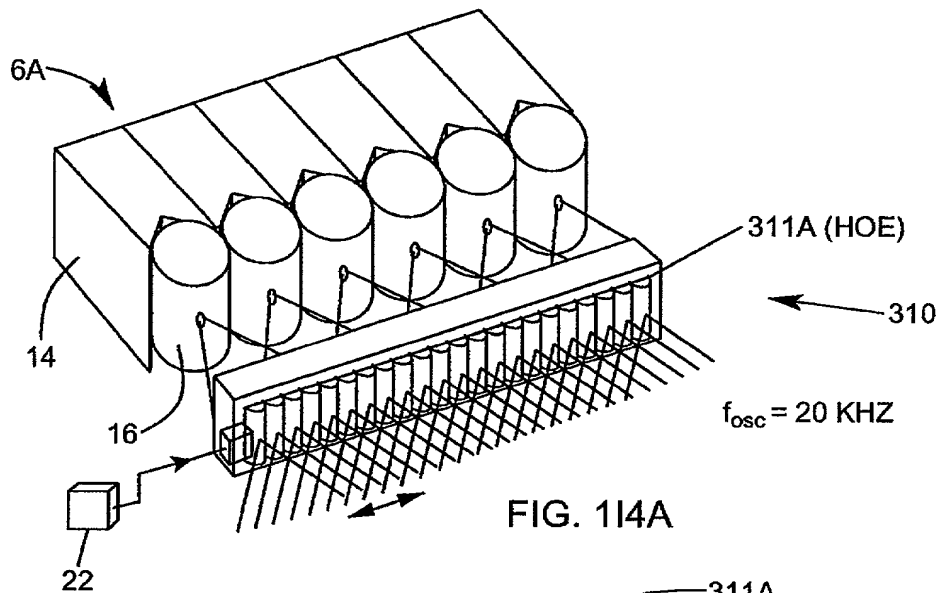


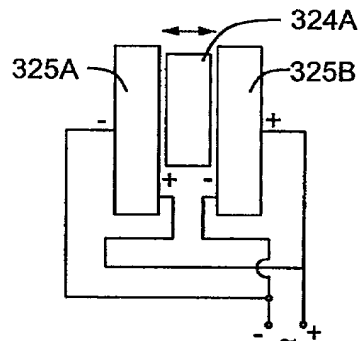
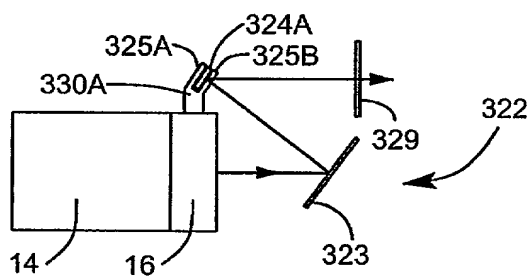
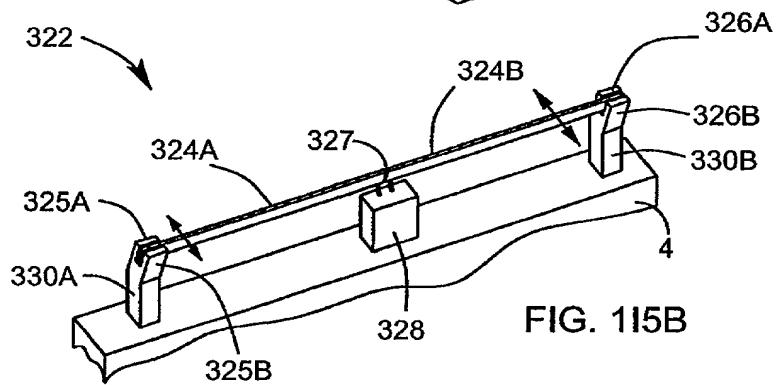
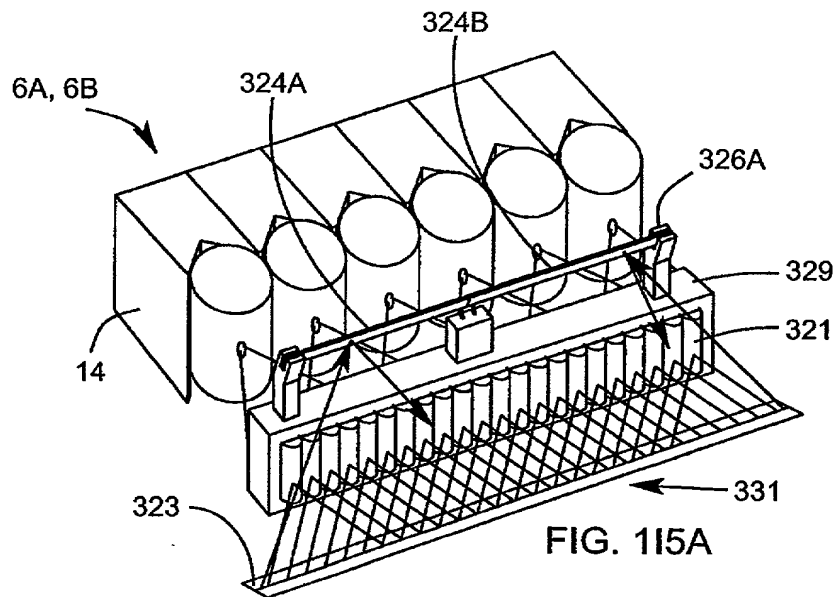
FIG. 113F



FIG. 113G

2007140 0001





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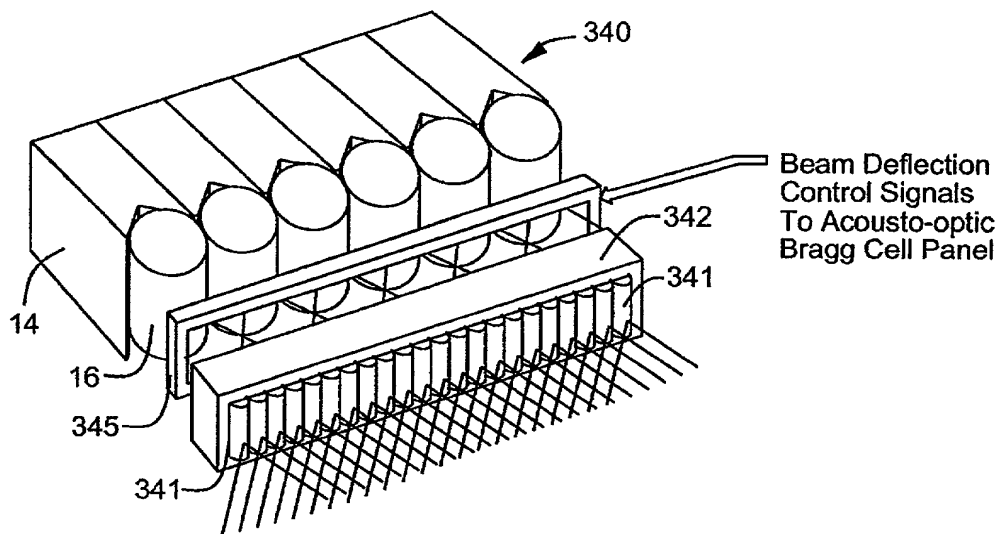


FIG. 116A

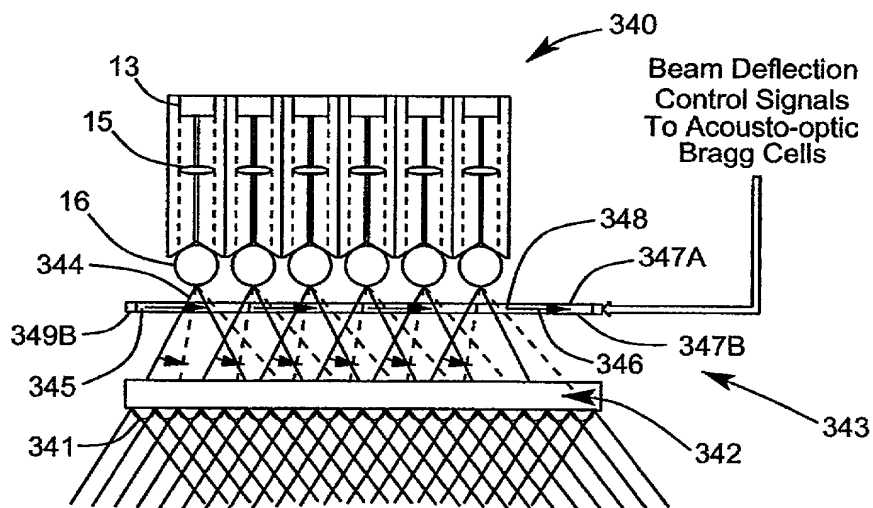


FIG. 116B





2006140 00129001

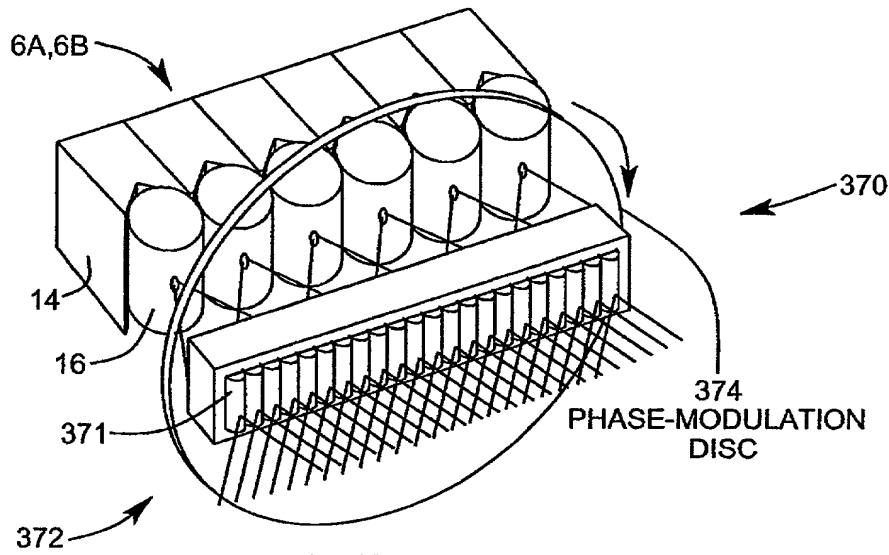


FIG. 118A

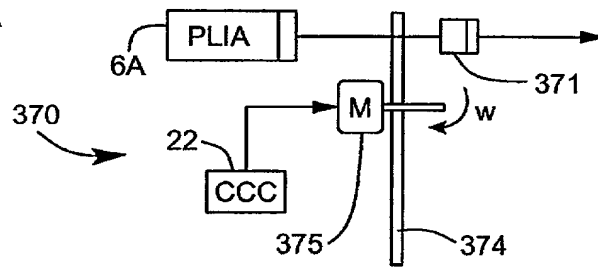


FIG. 118B

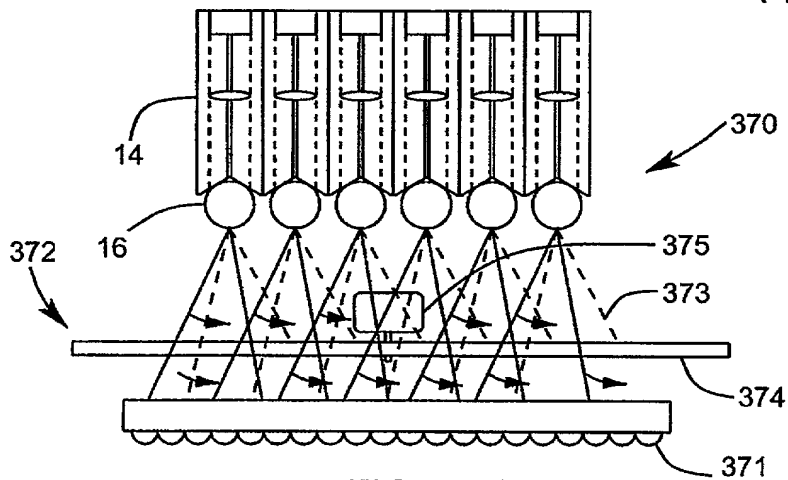


FIG. 118C



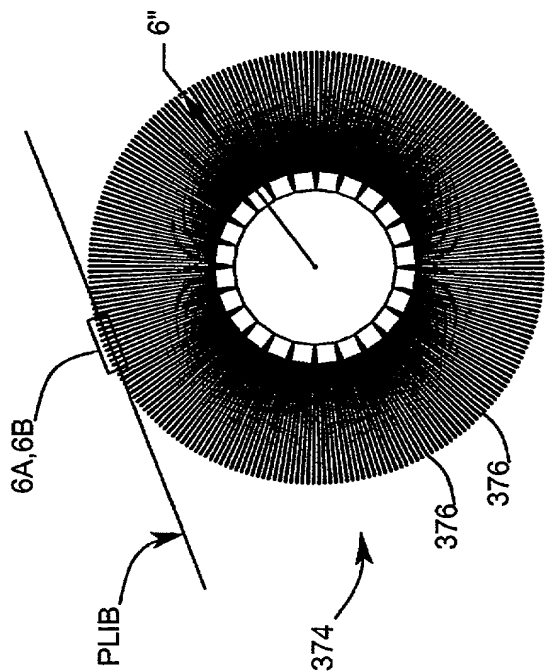


FIG. 118D

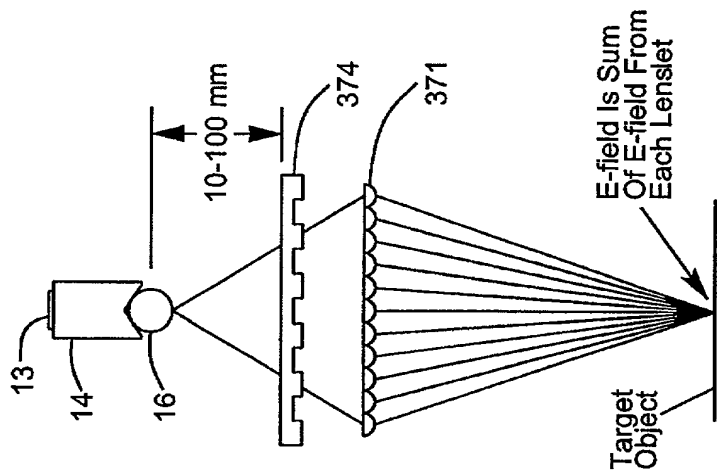
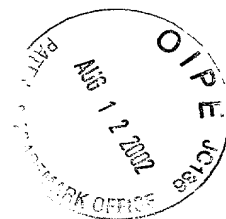


FIG. 118E



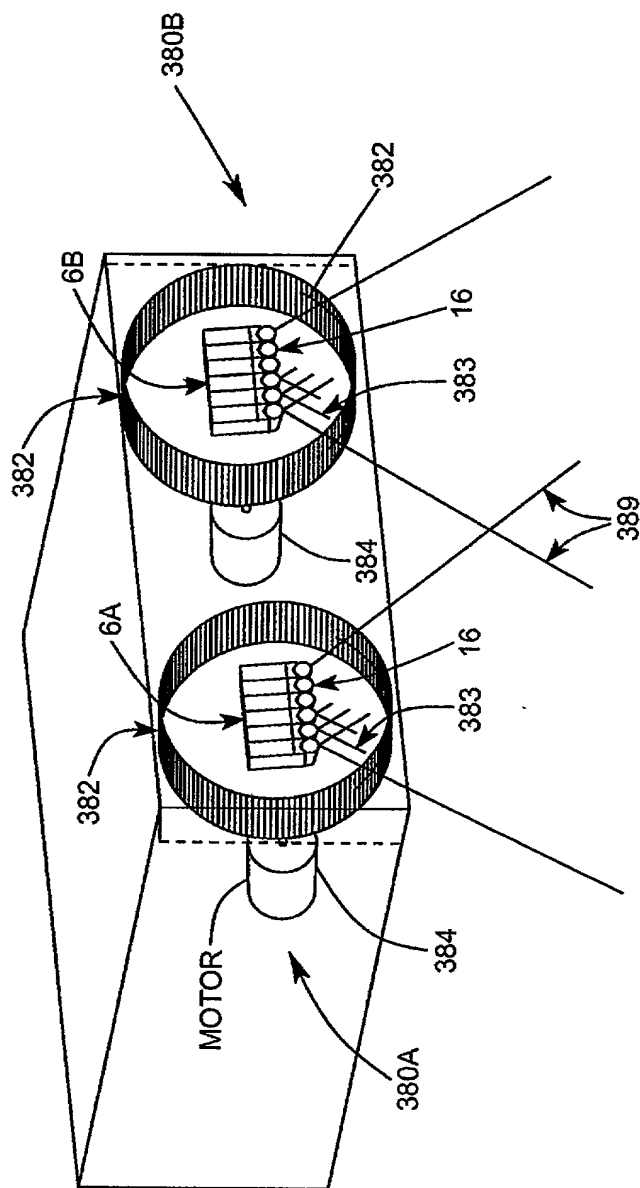


FIG. 119A



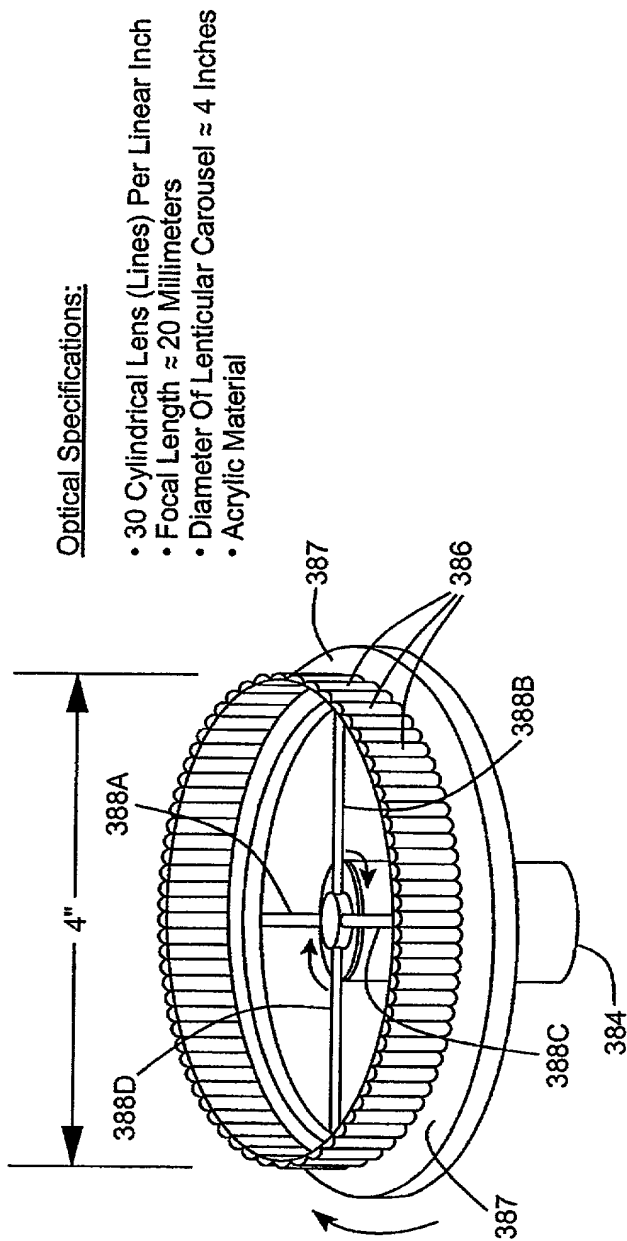
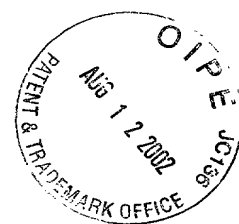


FIG. 119B



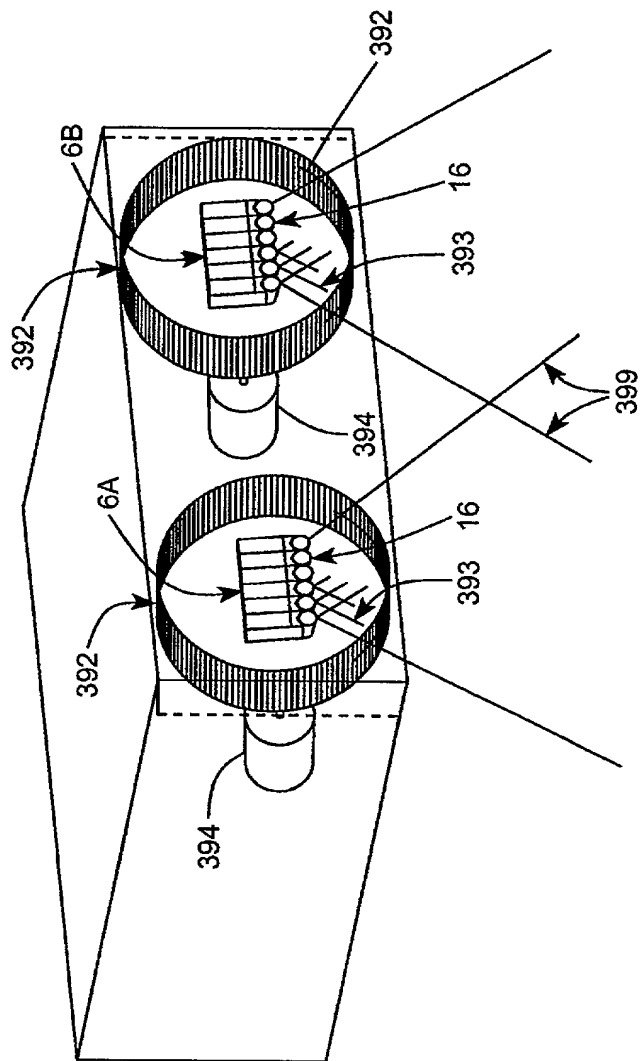
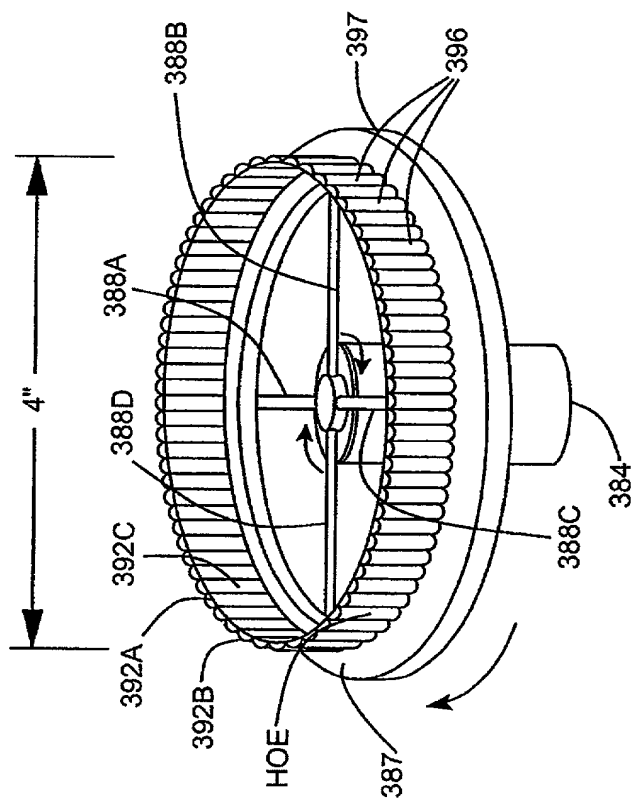


FIG. 1110A

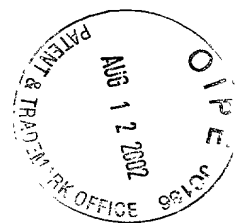




Optical Specifications:

- 30 Cylindrical Lens (Lines) Per Linear Inch
- Focal Length ≈ 20 Millimeters
- Diameter Of Lenticular Carousel ≈ 4 Inches

FIG. 1110B



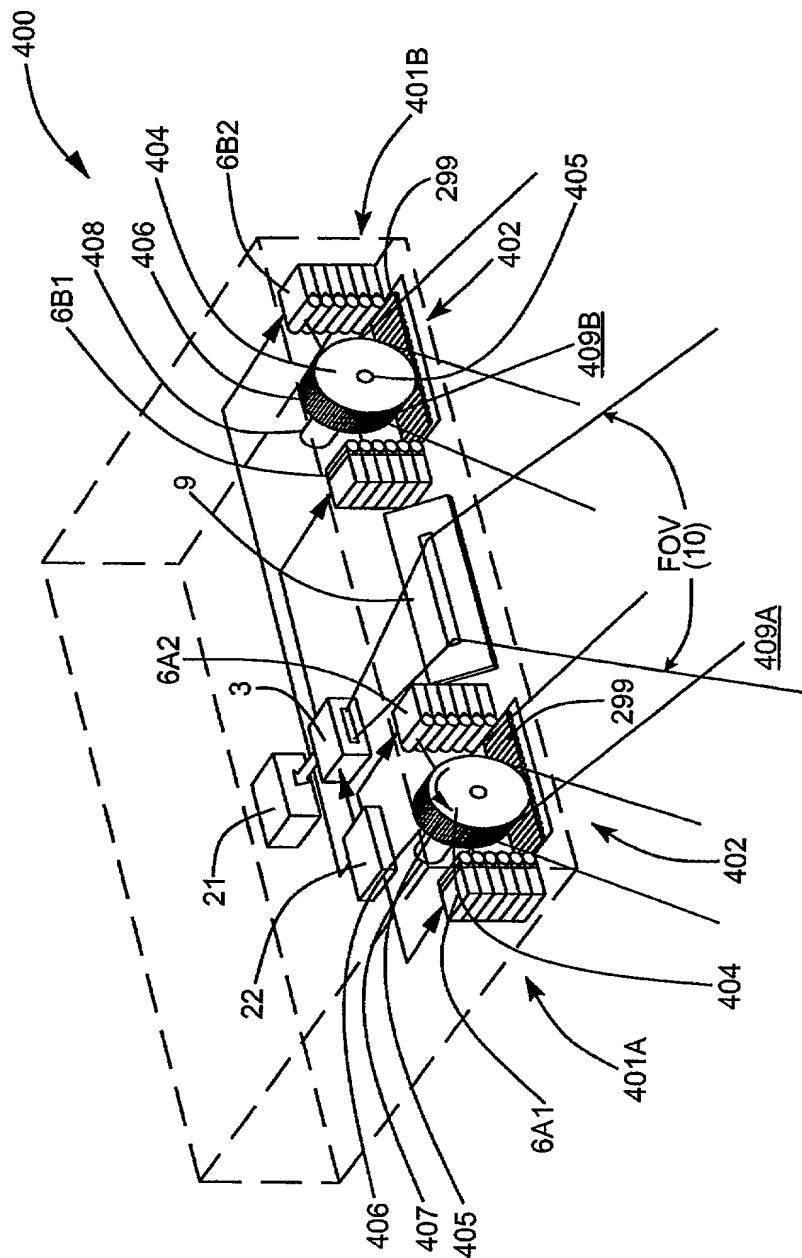


FIG. 1111A



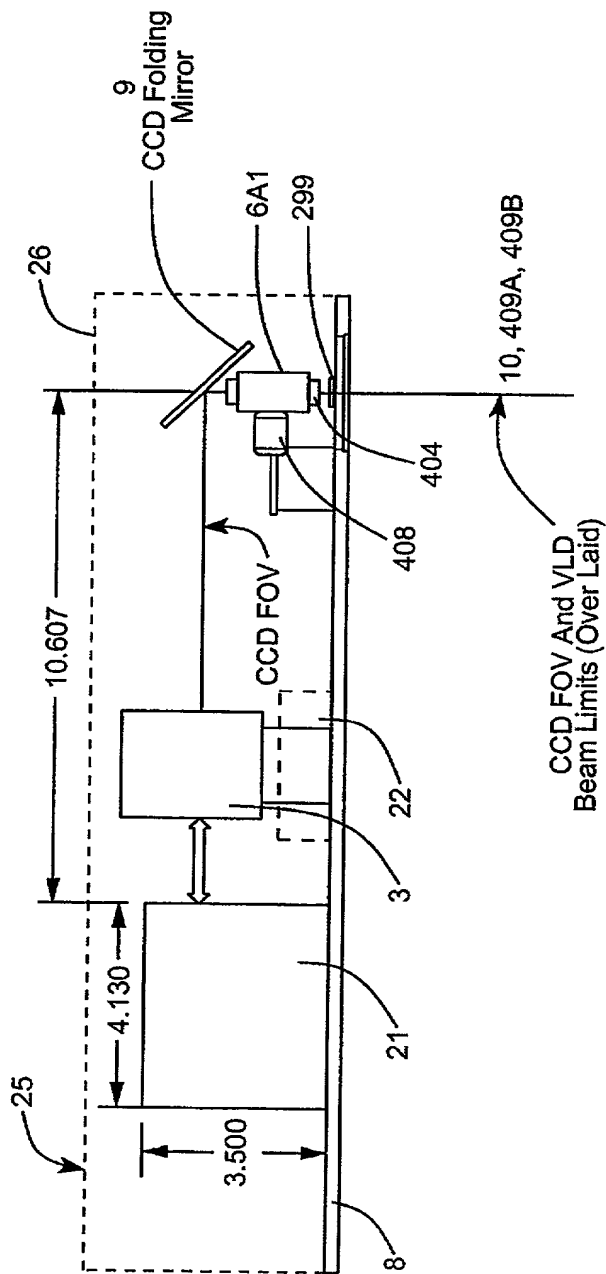
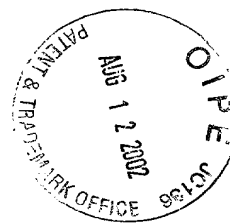


FIG. 1111B



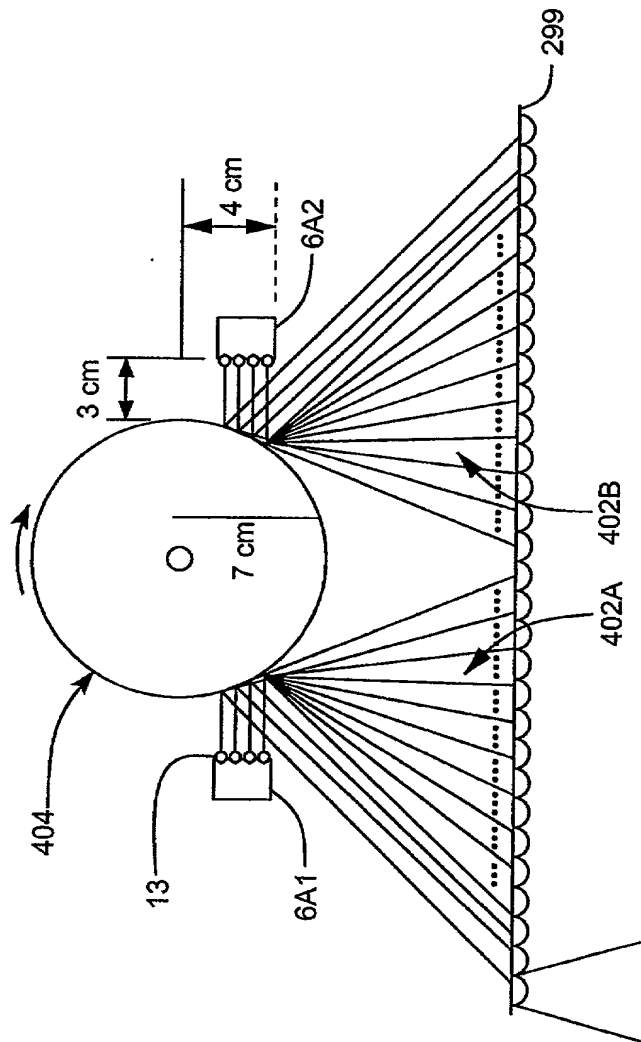


FIG. 1111C



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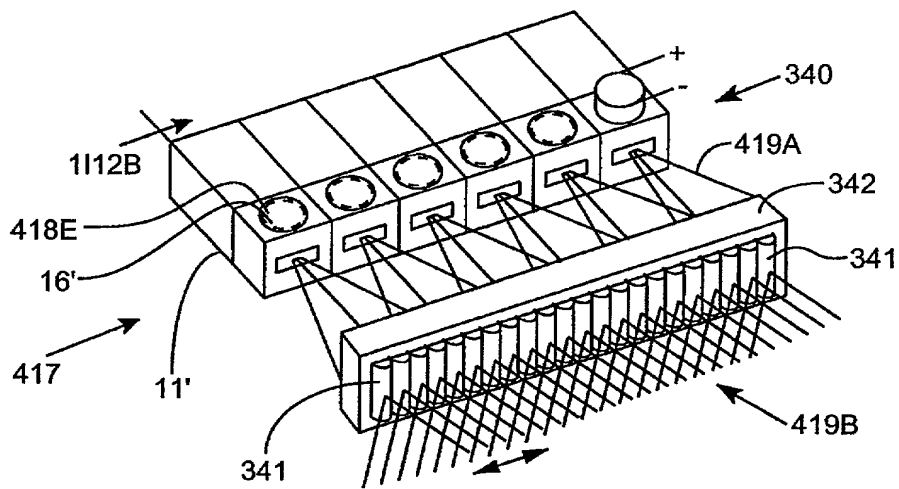


FIG. 1112A

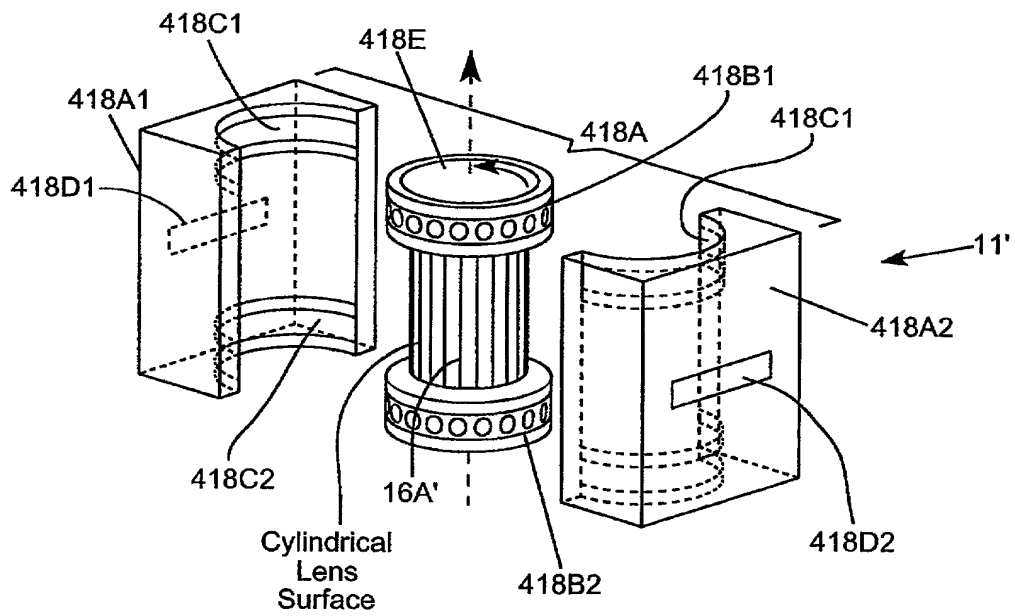


FIG. 1112B



10067140.081202

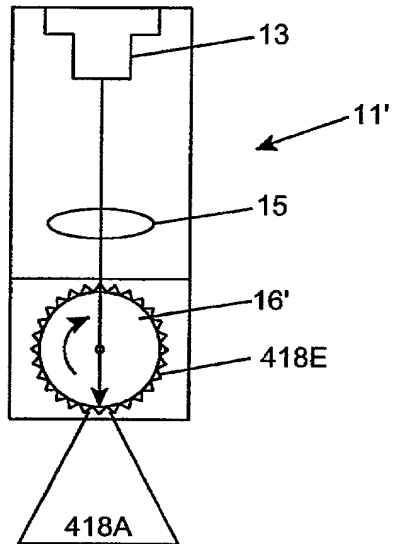


FIG. 1112C

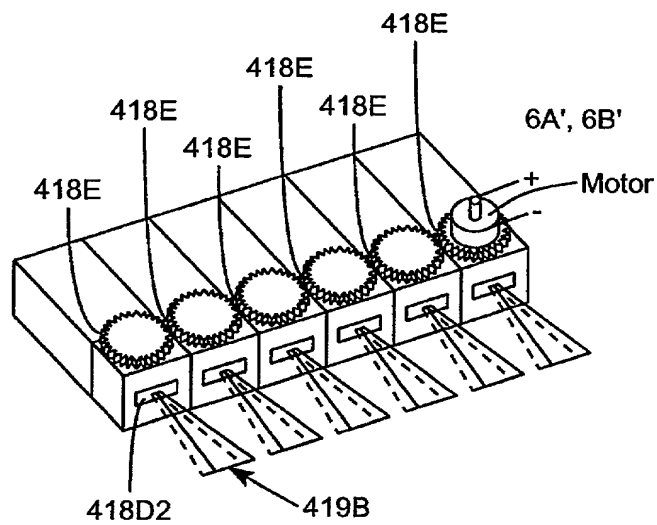


FIG. 1112D



Second Generalized Method Of
Reducing Speckle-Noise Patterns
At Image Detection Array
Of The IFD Subsystem (3)

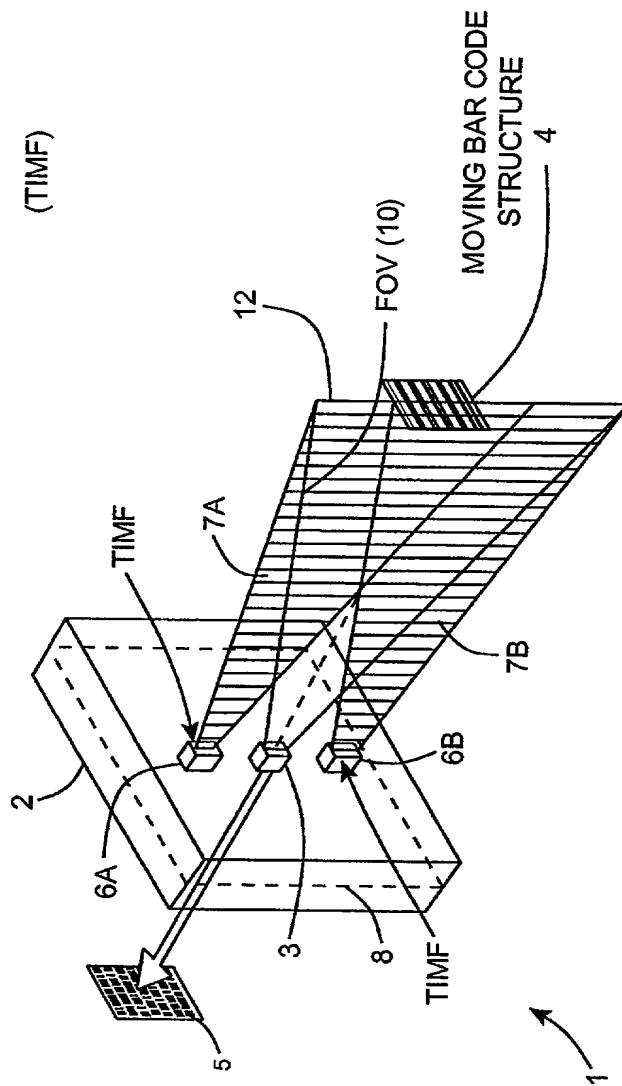
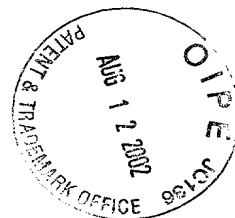


FIG. 1113



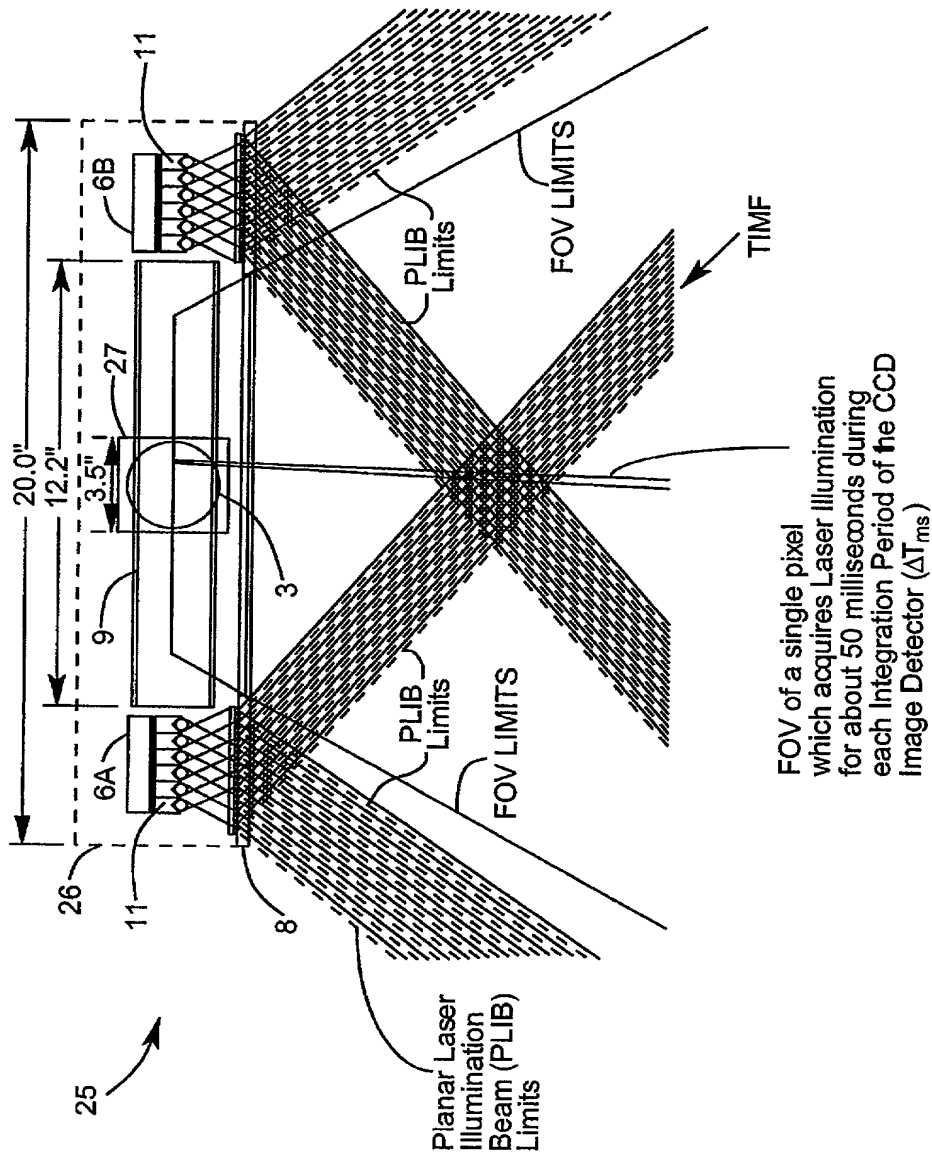


FIG. 1113A



THE SECOND GENERALIZED SPECKLE-NOISE PATTERN REDUCTION
METHOD OF THE PRESENT INVENTION

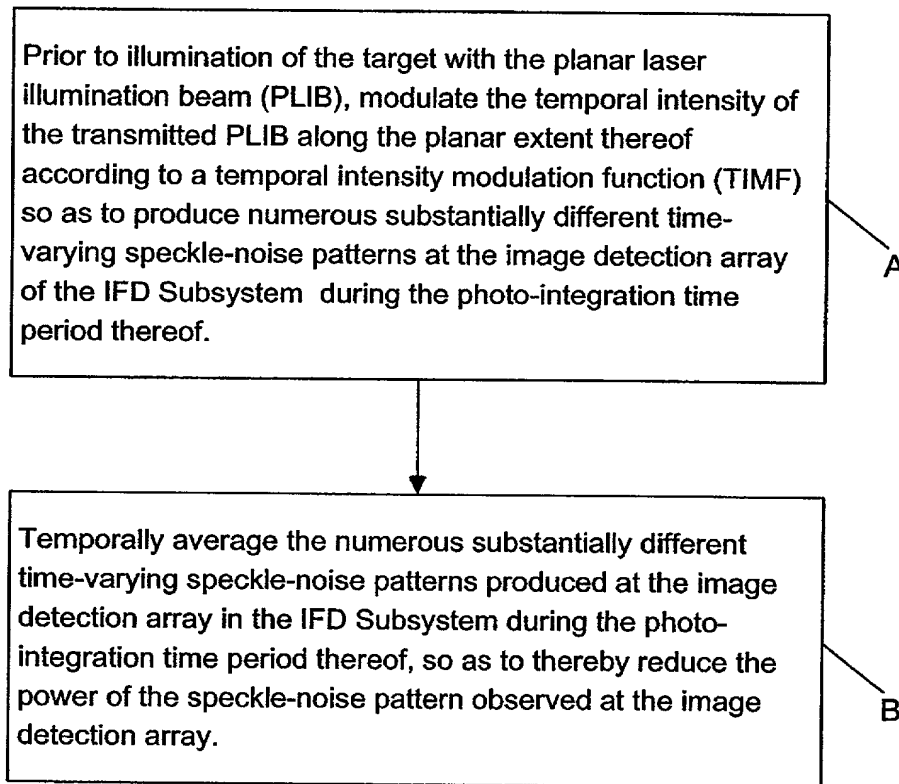


FIG. 1113B



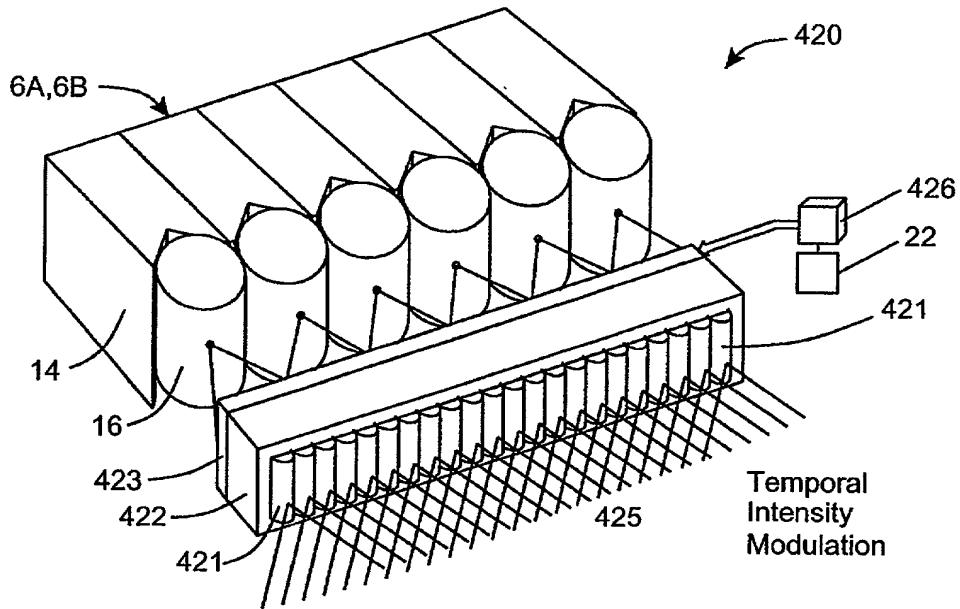


FIG. 1114A

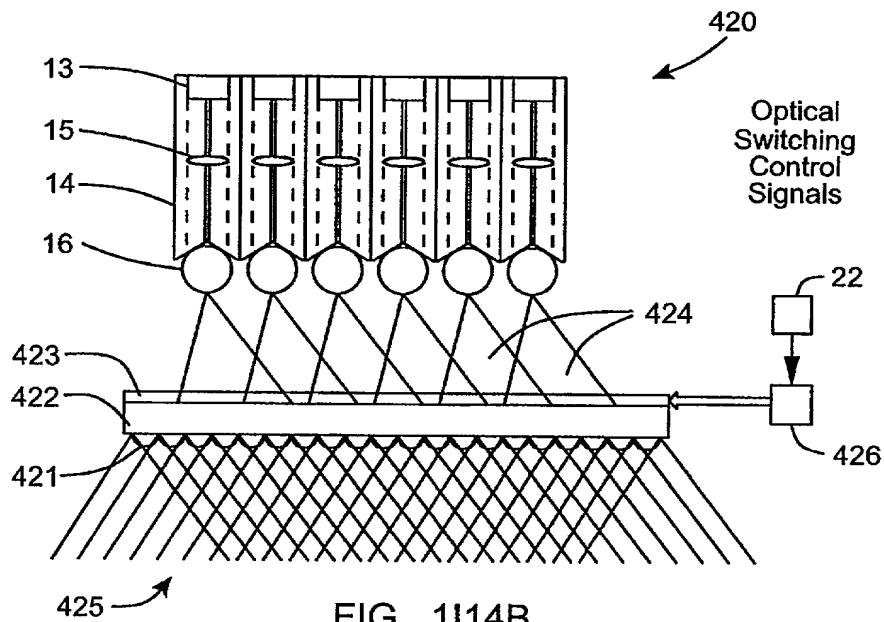
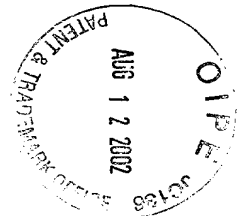


FIG. 1114B



202108140-081202

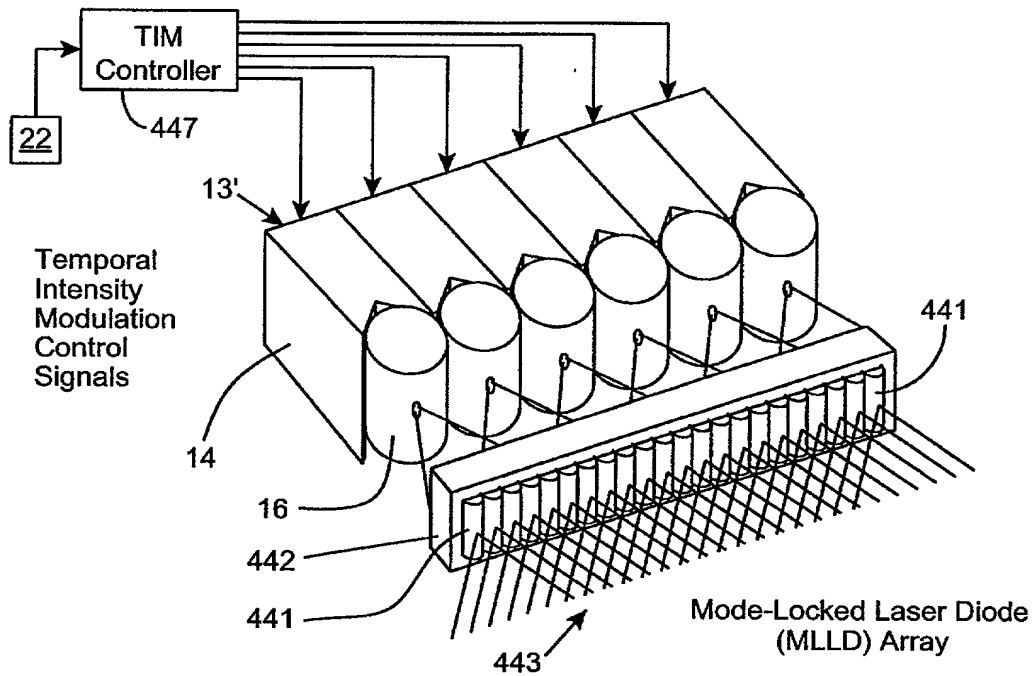


FIG. 1115A

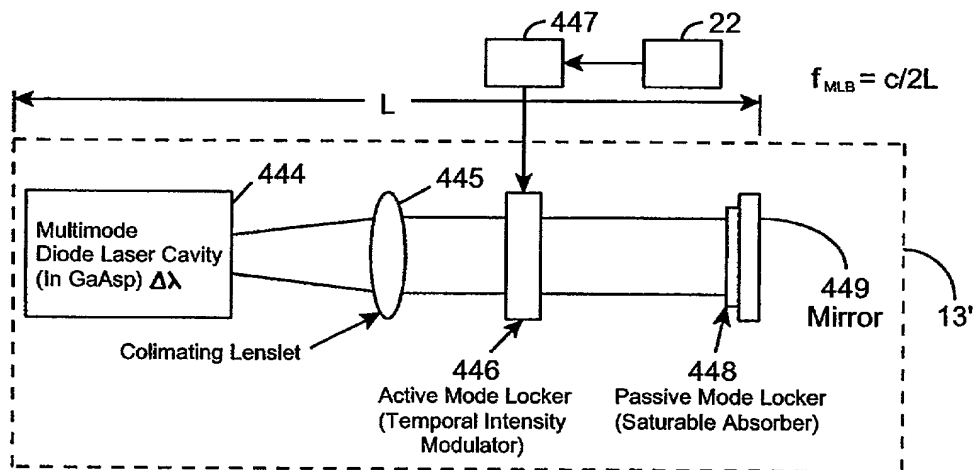


FIG. 1115B



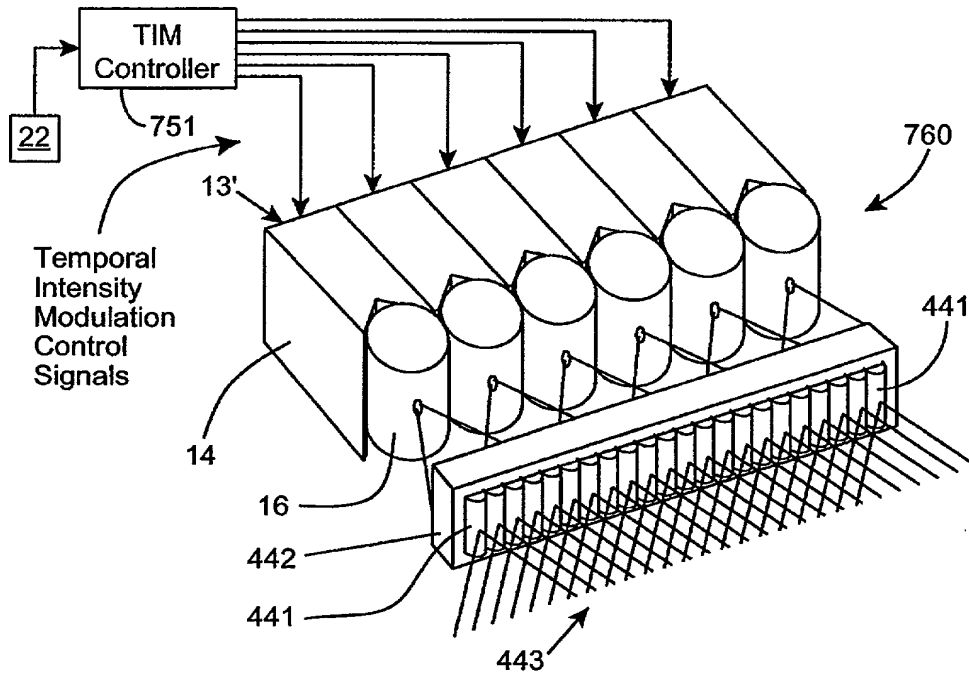


FIG. 1I15C

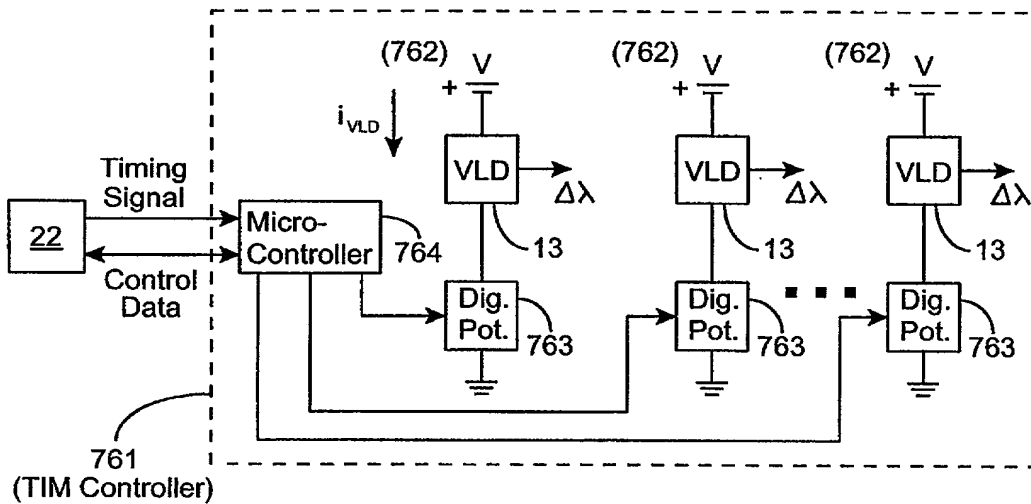


FIG. 1I15D



10067140.081202

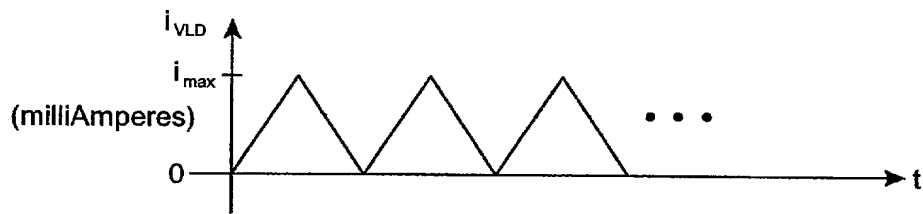


FIG. 1I15E

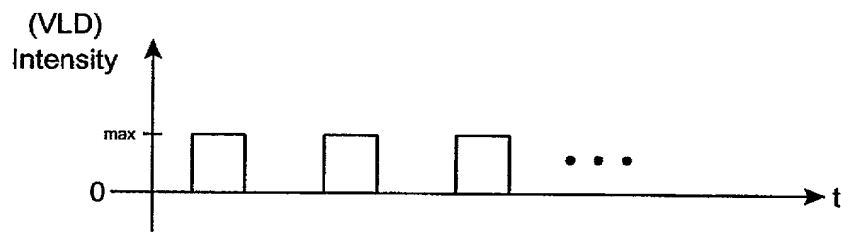


FIG. 1I15F



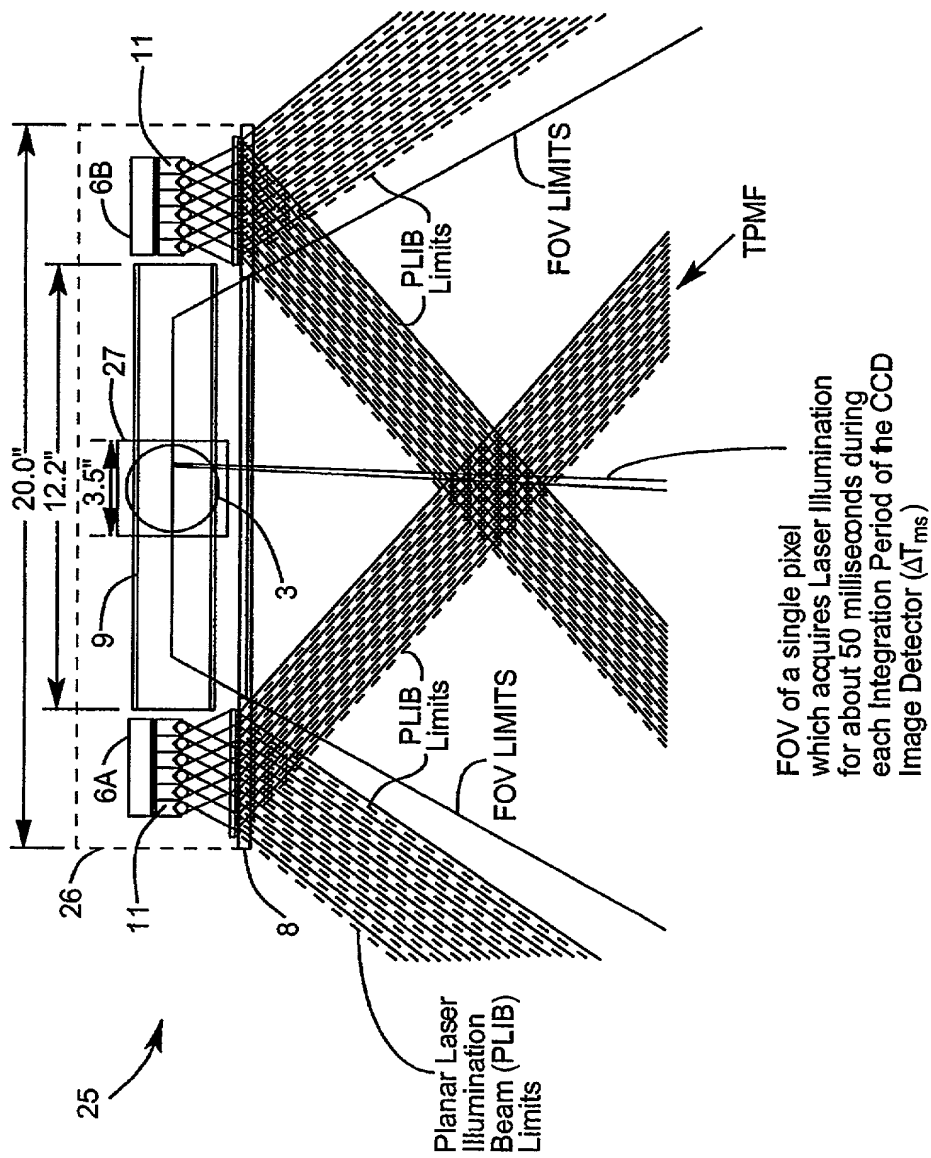
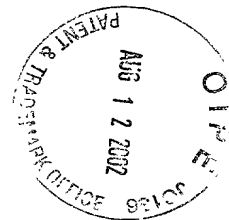


FIG. 1116A



40067440-031200

THE THIRD GENERALIZED SPECKLE-NOISE PATTERN REDUCTION
METHOD OF THE PRESENT INVENTION

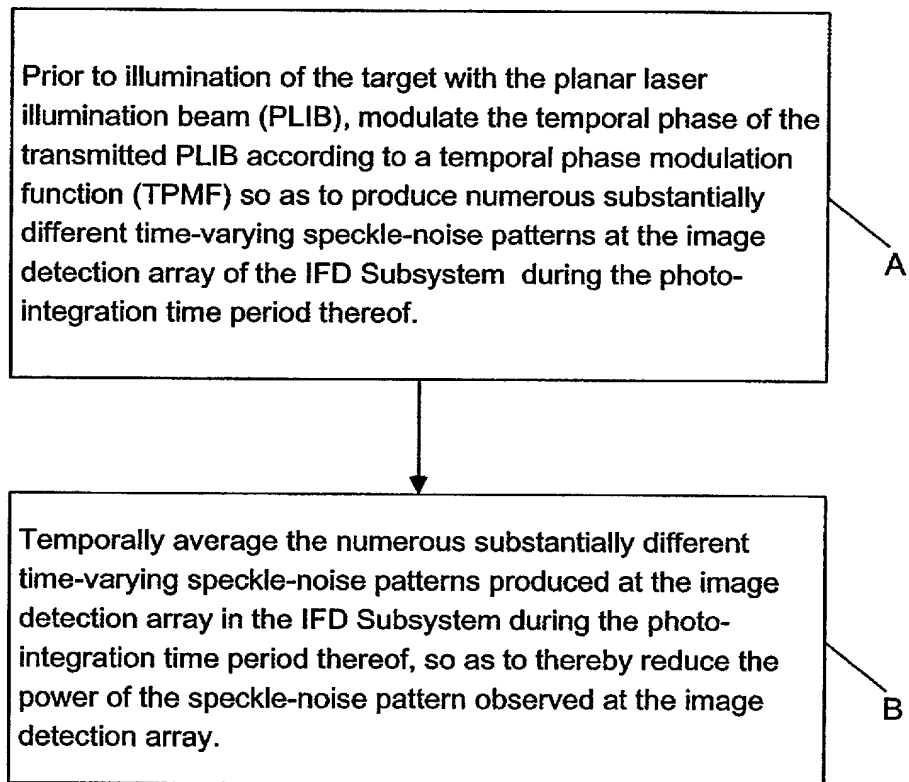


FIG. 1116B



10067140-0812002

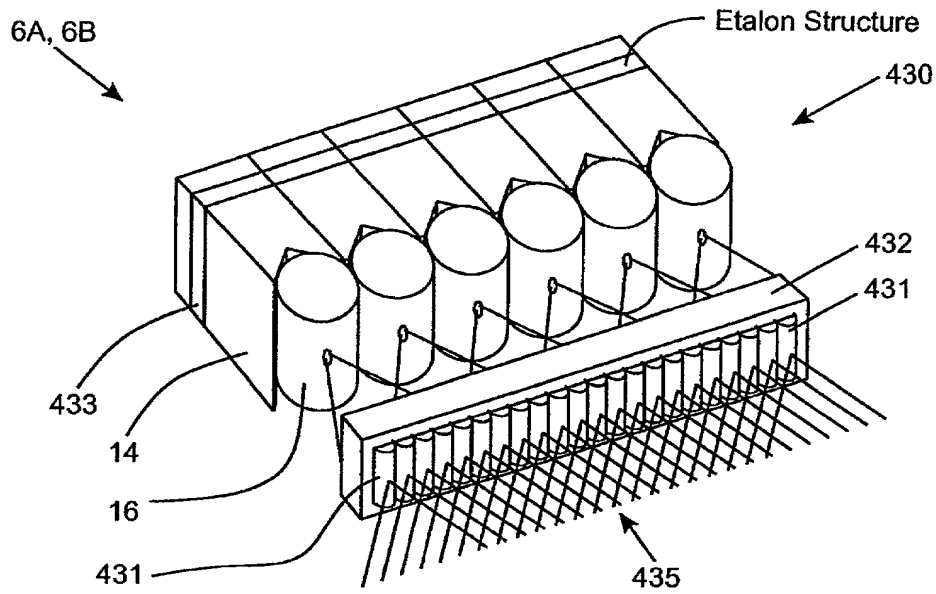


FIG. 1117A

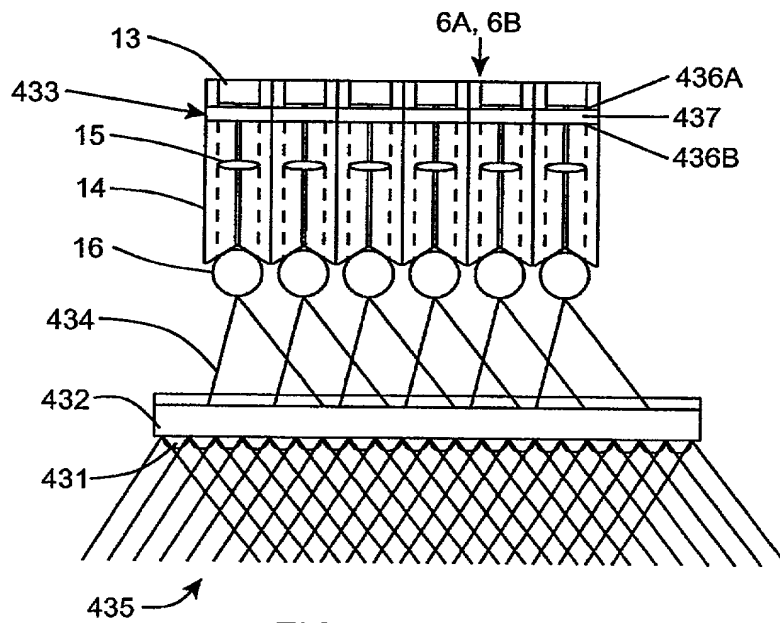


FIG. 1117B



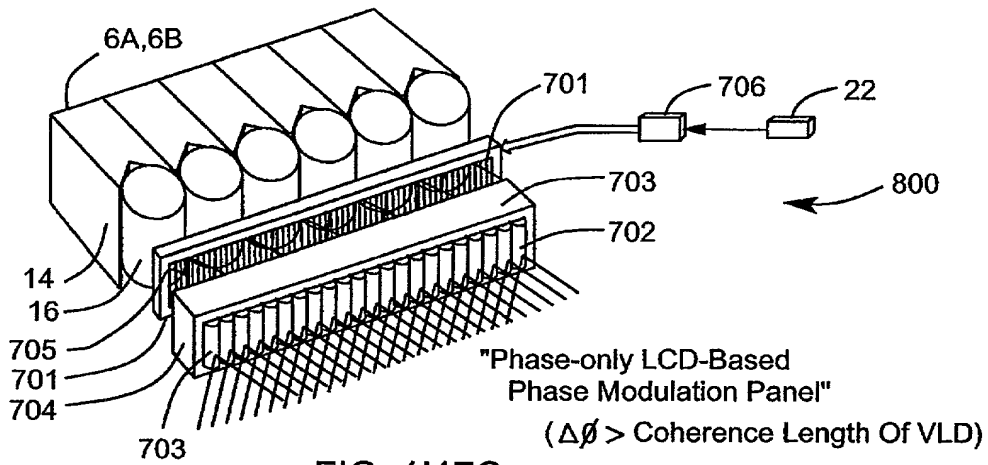


FIG. 1117C

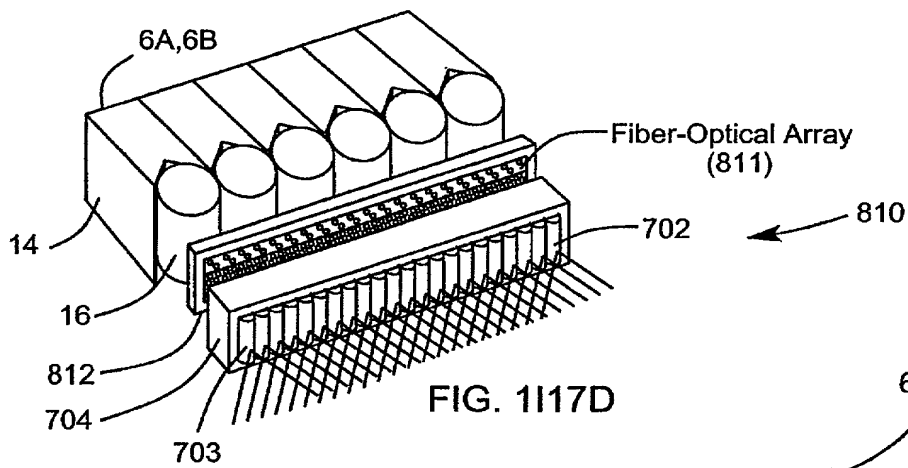


FIG. 1117D

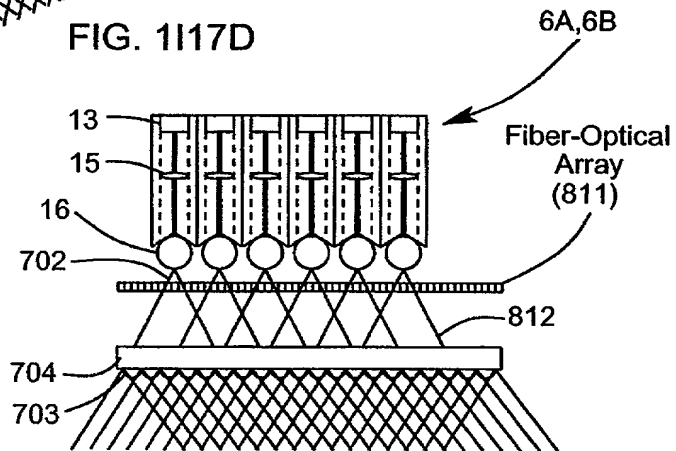
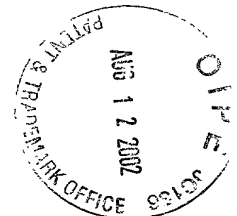


FIG. 1117E



Fourth Generalized Method Of
Reducing Speckle-Noise Patterns
At Image Detection Array
Of The IFD Subsystem (3).

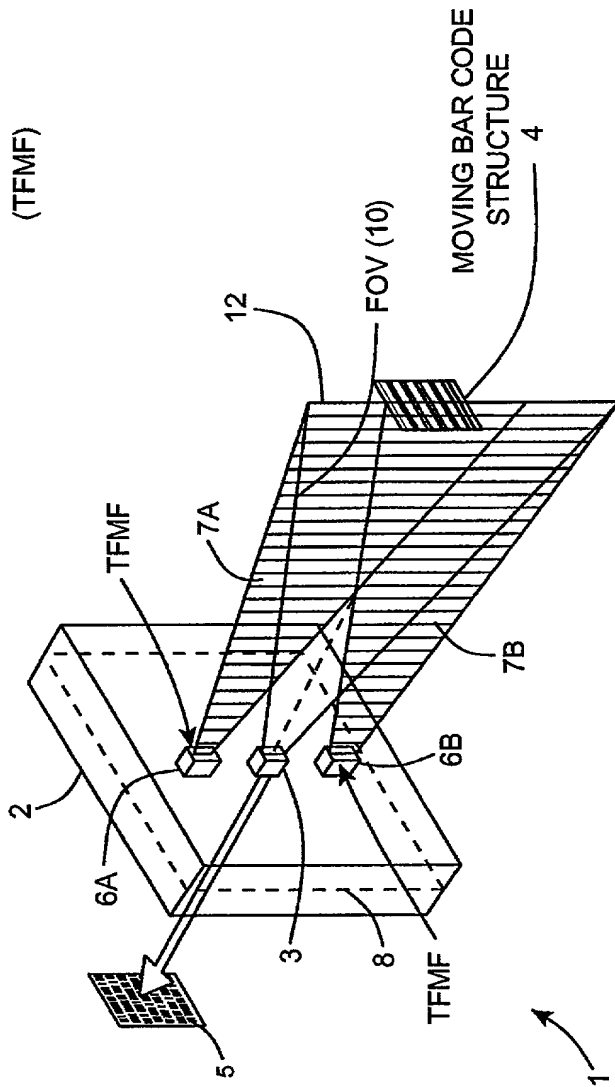
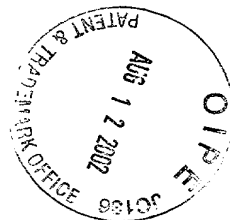


FIG. 1118



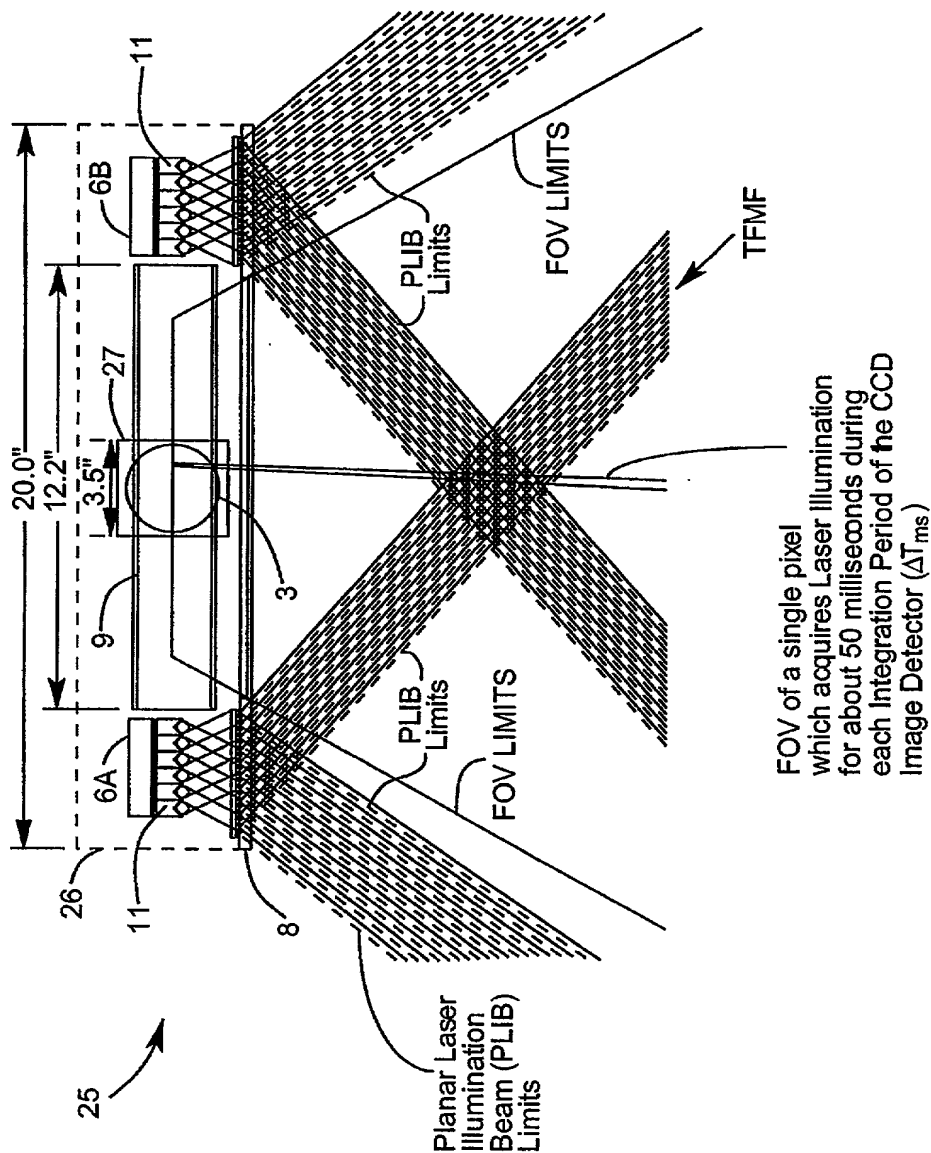
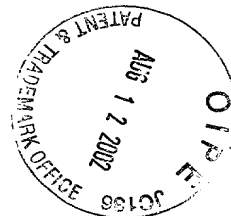


FIG. 1118A



2007-11-08 14:00:00

THE FOURTH GENERALIZED SPECKLE-NOISE PATTERN REDUCTION
METHOD OF THE PRESENT INVENTION

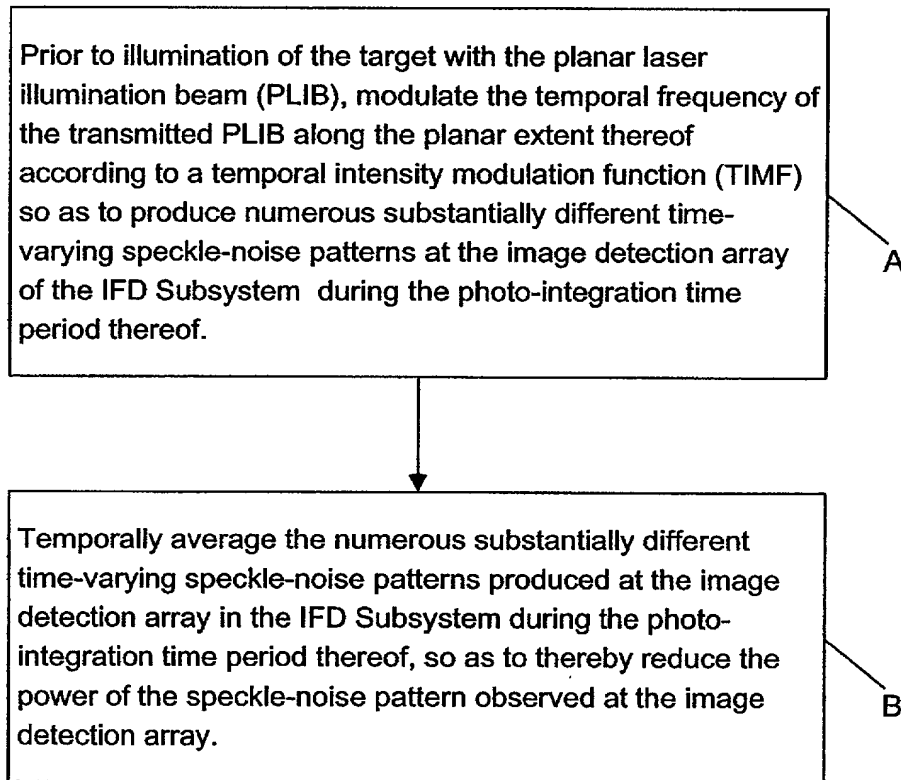
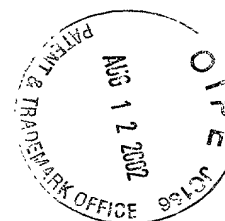
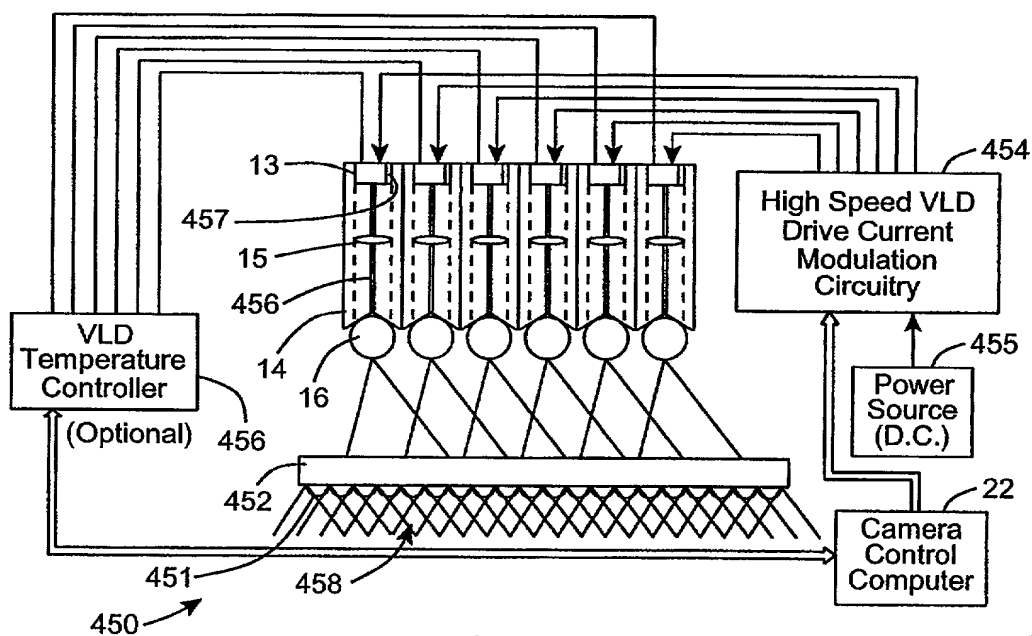
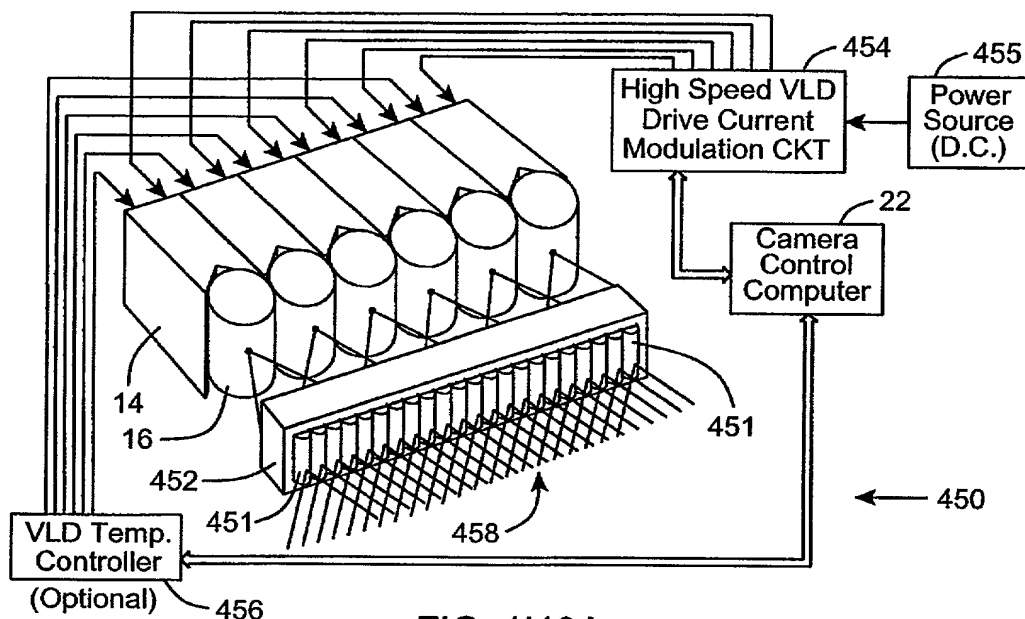


FIG. 1118B





Multi-Mode Diodes

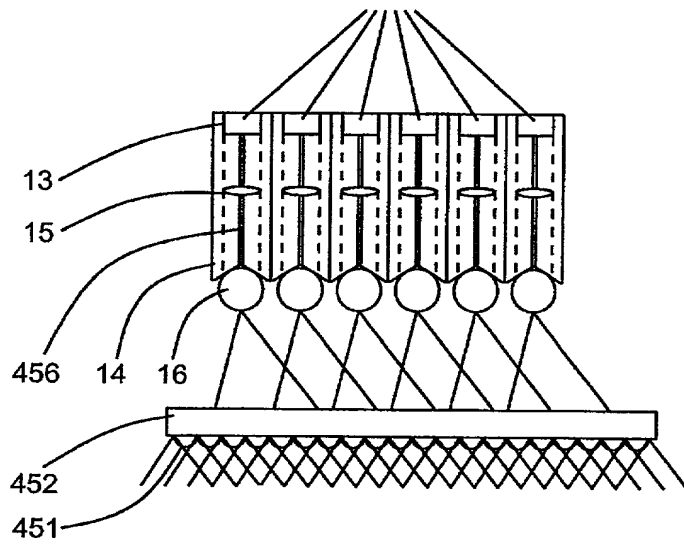


FIG. 1119C



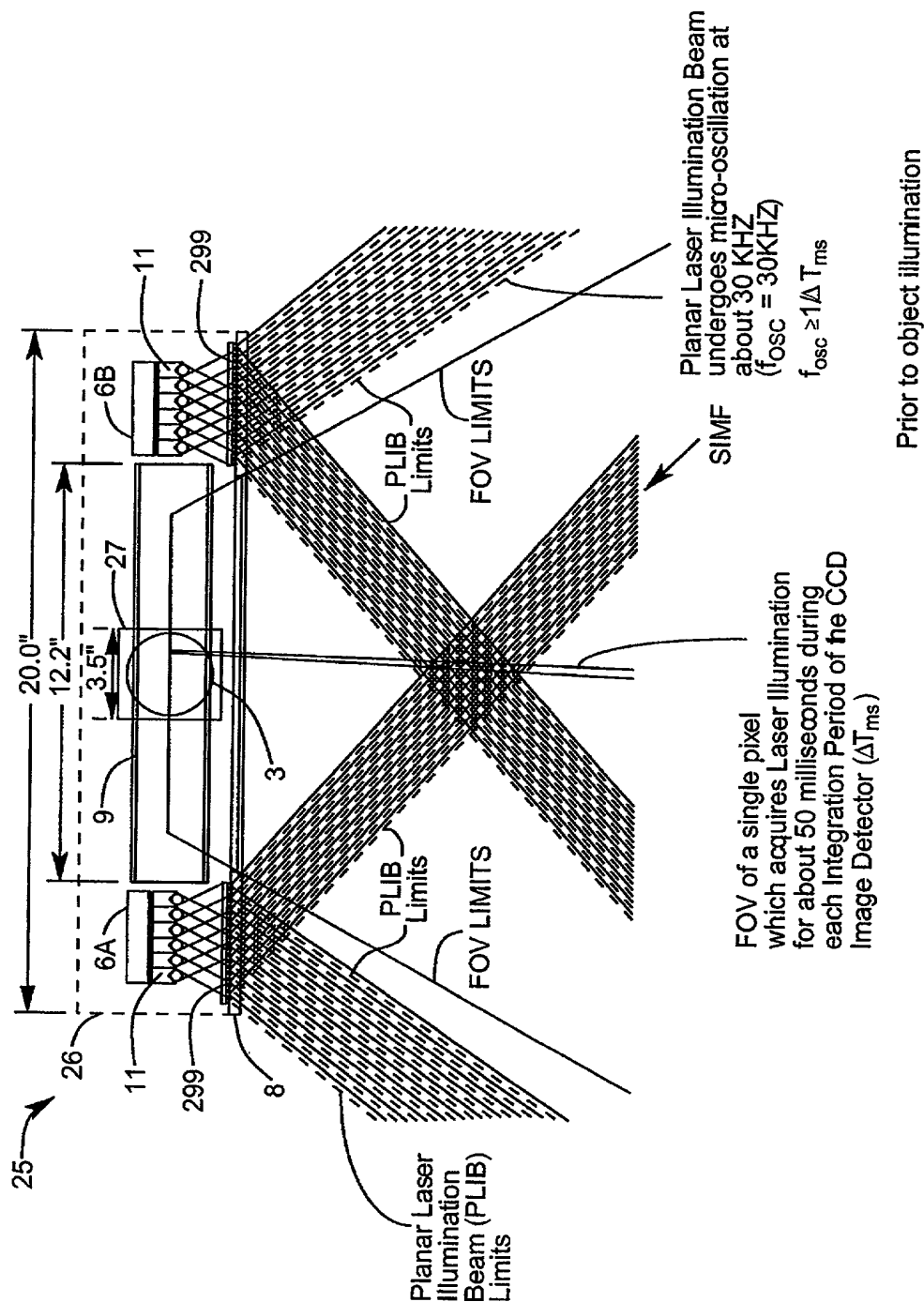


FIG. 1120A



10067440 081202

THE FIFTH GENERALIZED SPECKLE-NOISE PATTERN REDUCTION
METHOD OF THE PRESENT INVENTION

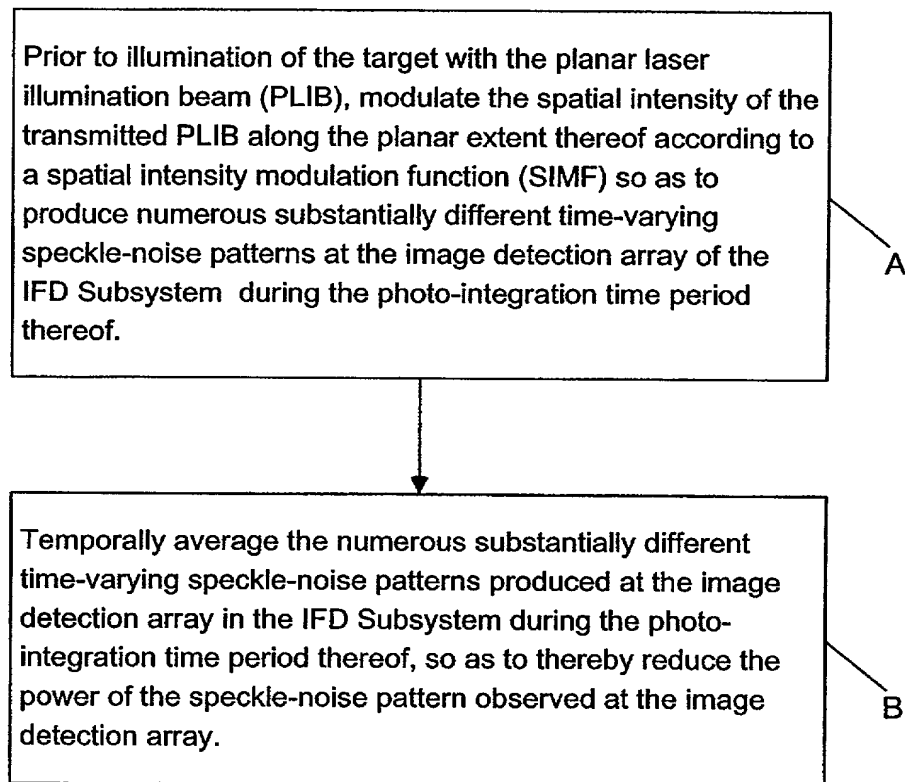
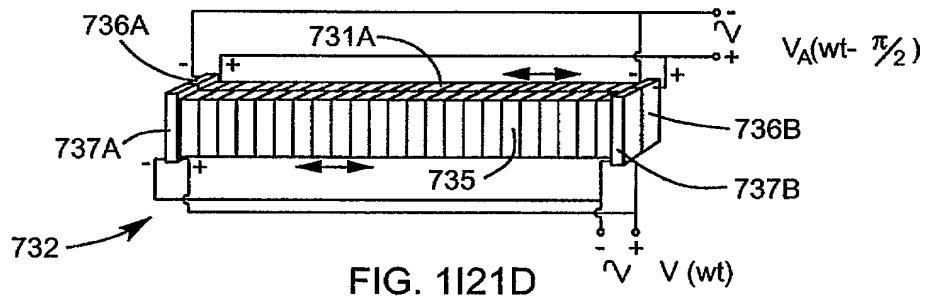
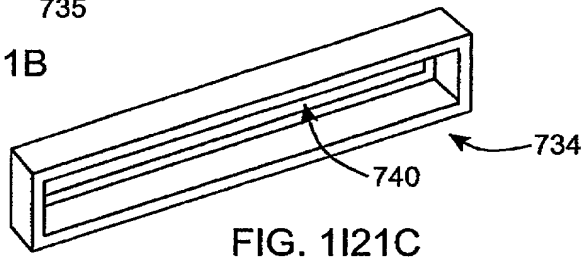
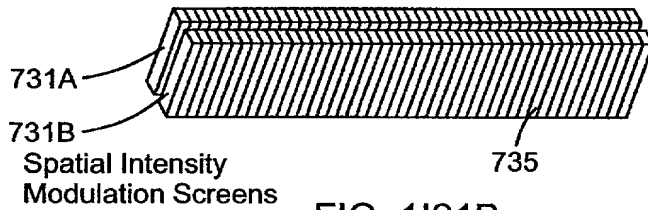
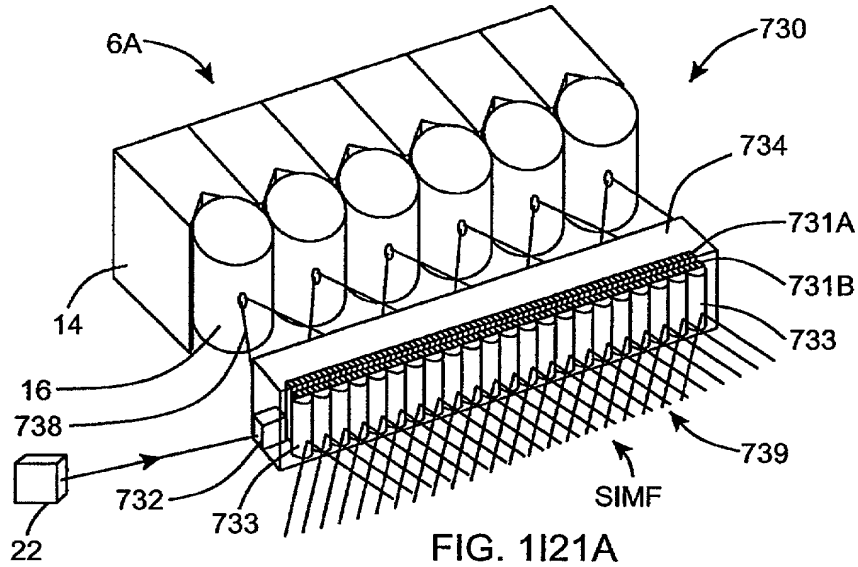


FIG. 1I20B





Sixth Generalized Method Of
Reducing Speckle-Noise Patterns
At Image Detection Array
Of The IFD Subsystem (3)

(SIMF)

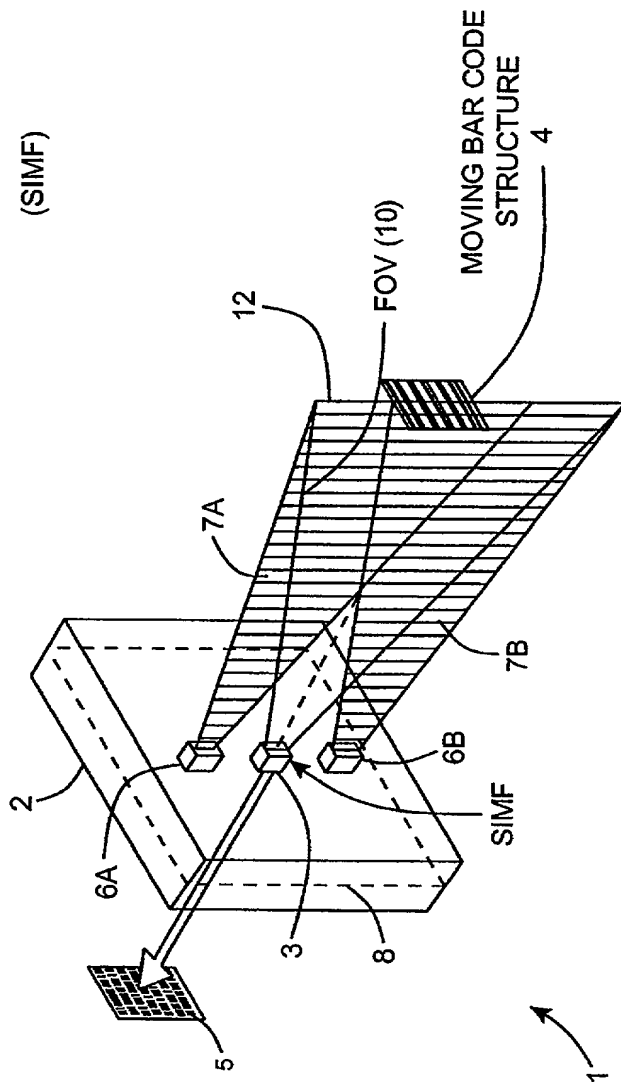


FIG. 1122



200204129007

THE SIXTH GENERALIZED SPECKLE-NOISE PATTERN REDUCTION
METHOD OF THE PRESENT INVENTION

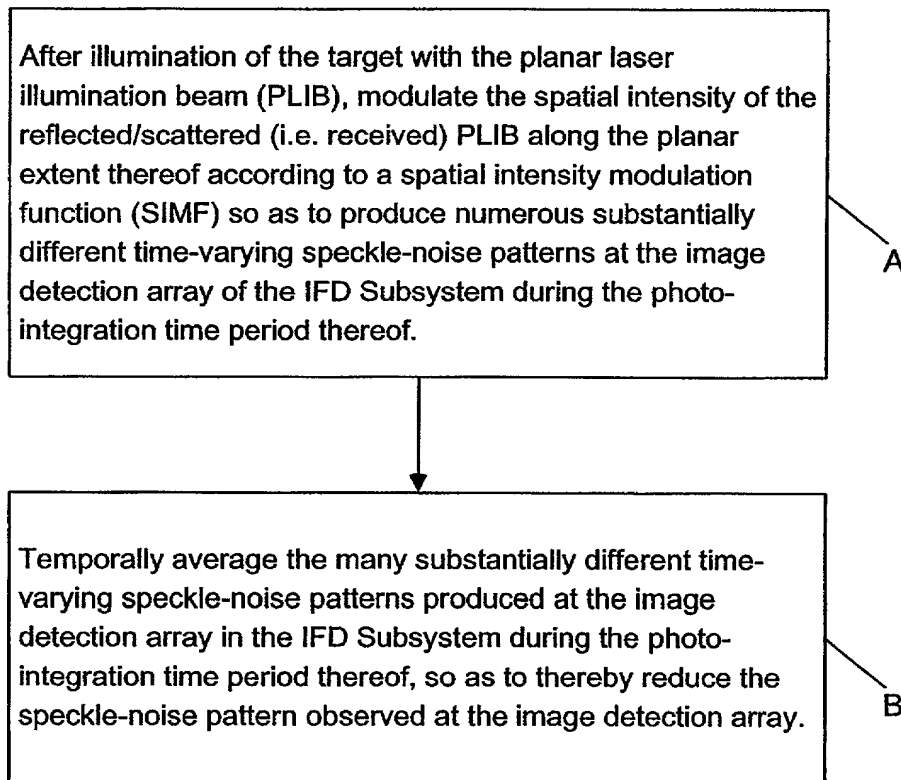


FIG. 1I22B



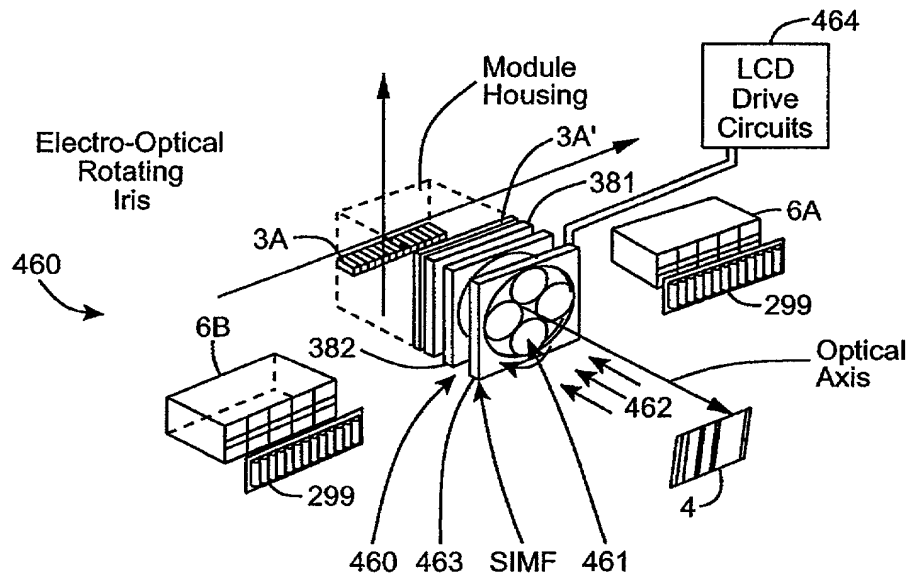


FIG. 1123A

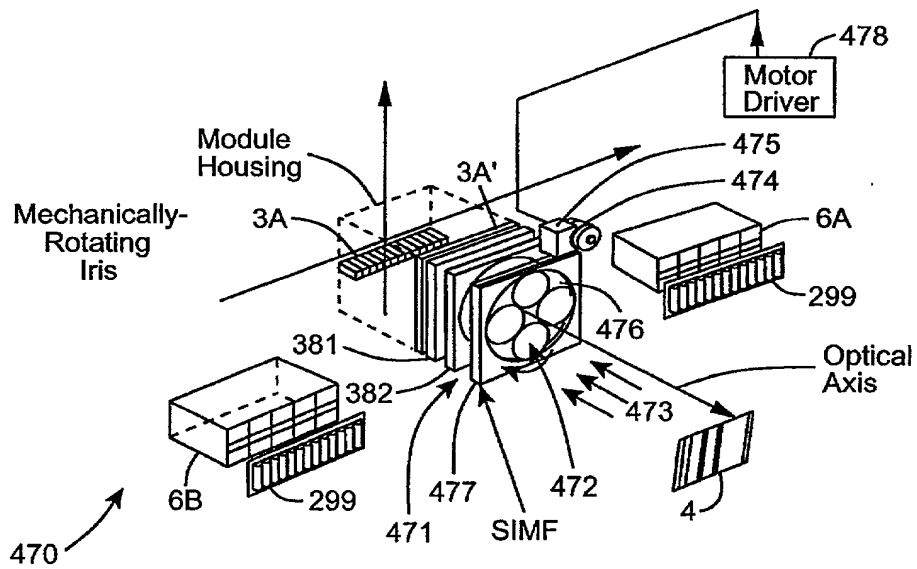


FIG. 1123B



Seventh Generalized Method Of
Reducing Speckle-Noise Patterns
At Image Detection Array
Of The IFD Subsystem (3).

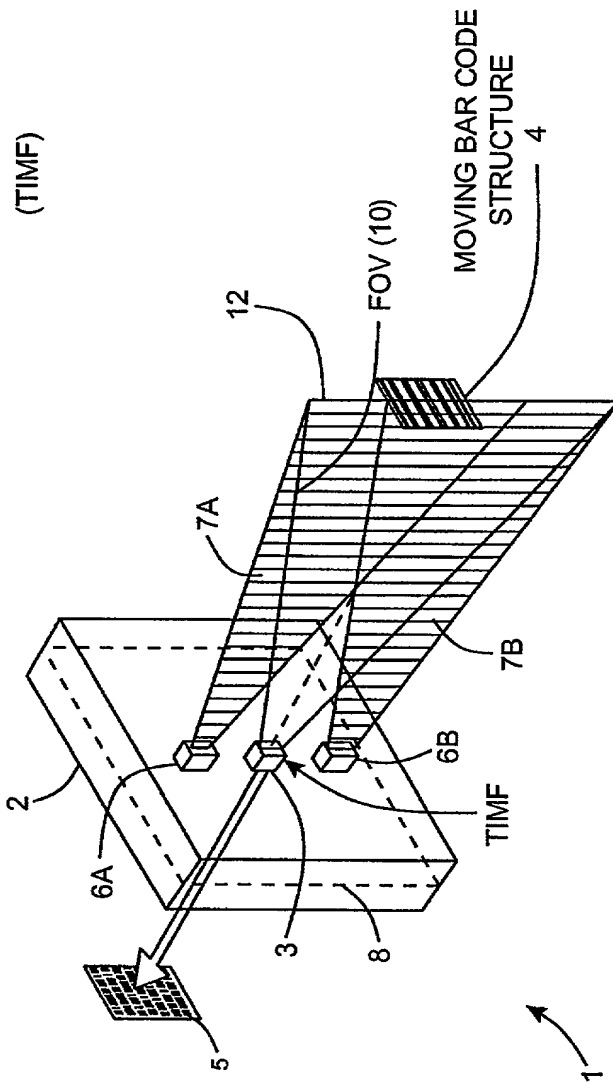


FIG. 1124



202180" 041129001

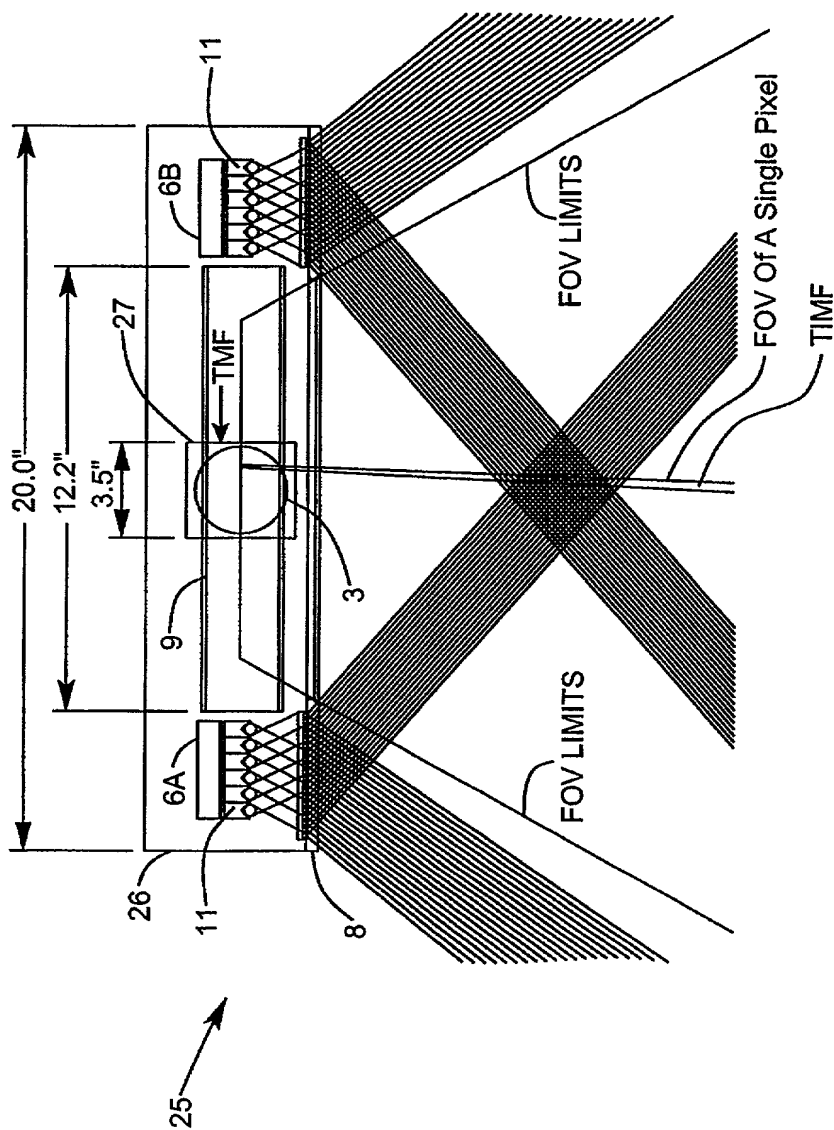


FIG. 1124A



THE SEVENTH GENERALIZED SPECKLE-NOISE PATTERN REDUCTION
METHOD OF THE PRESENT INVENTION

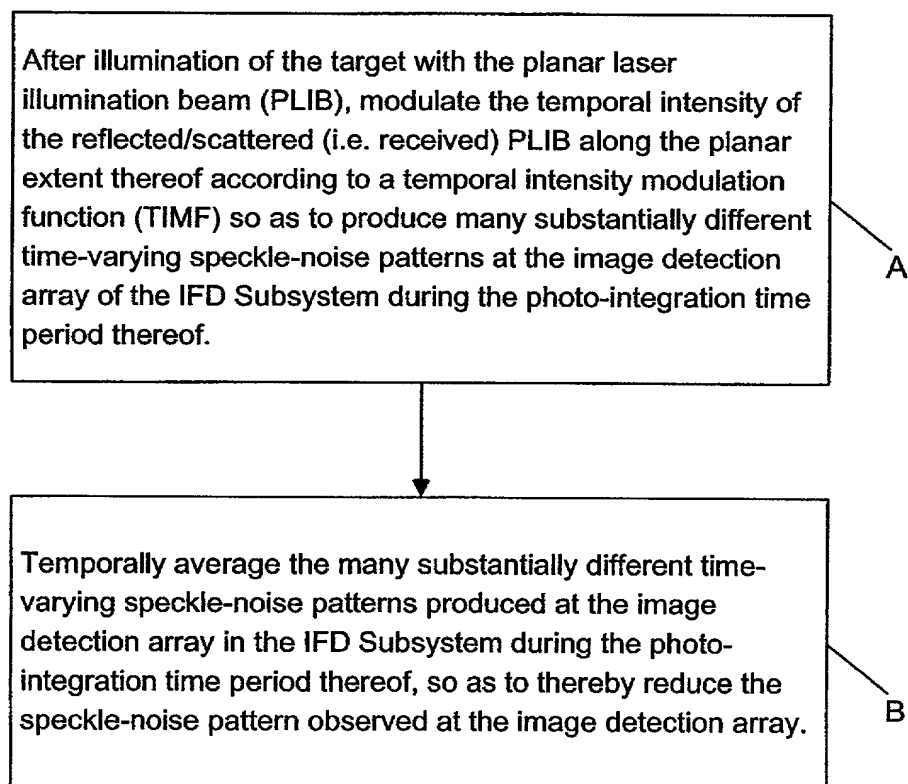


FIG. 1124B



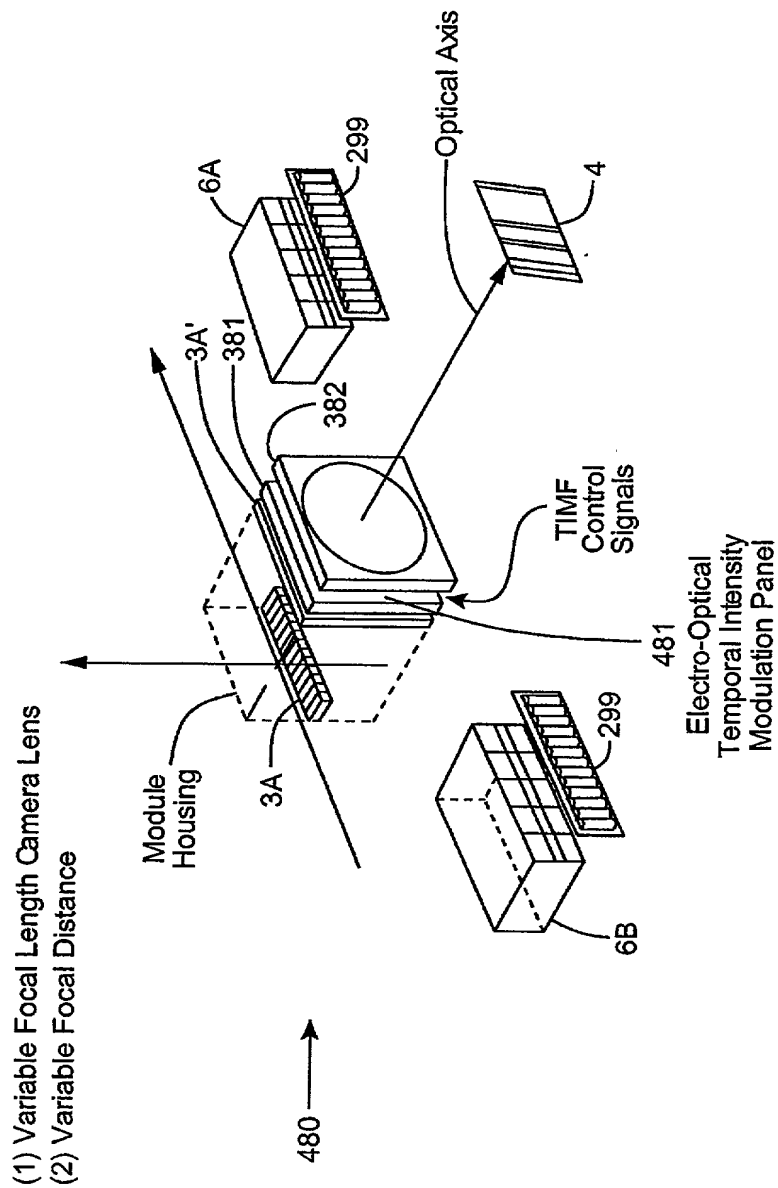


FIG. 1124C



2002-08-01 14:00:00

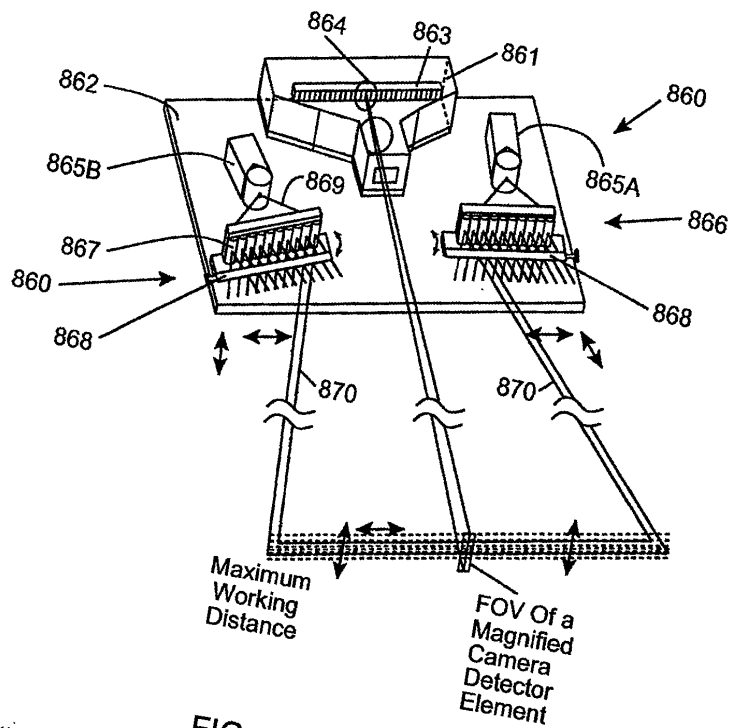


FIG. 1125A1

* Lateral And Transverse Micro-oscillation Of PLIB

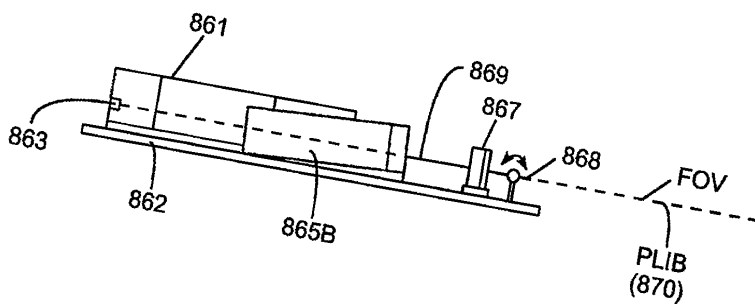
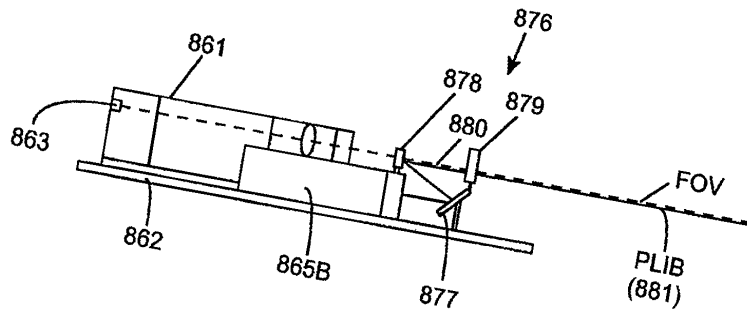
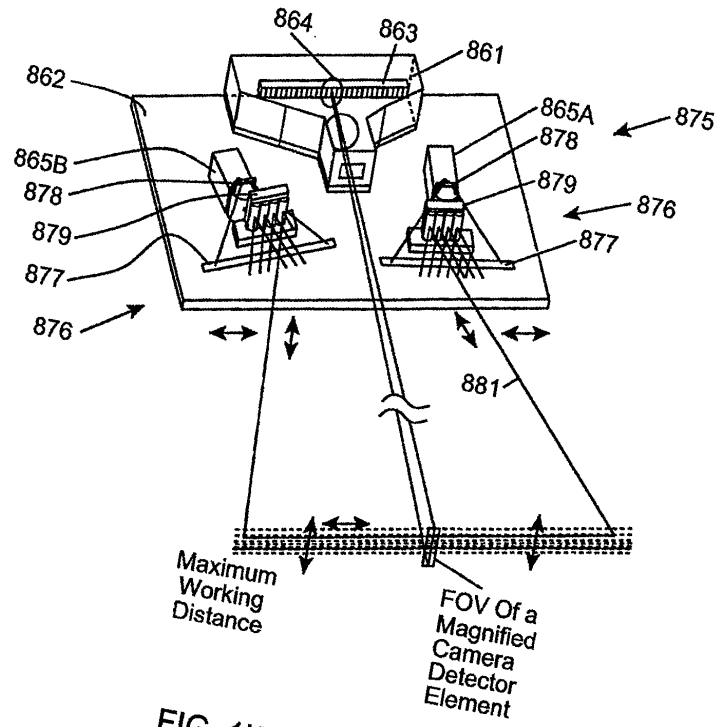


FIG. 1125A2



2002-08-01



2002-07-20

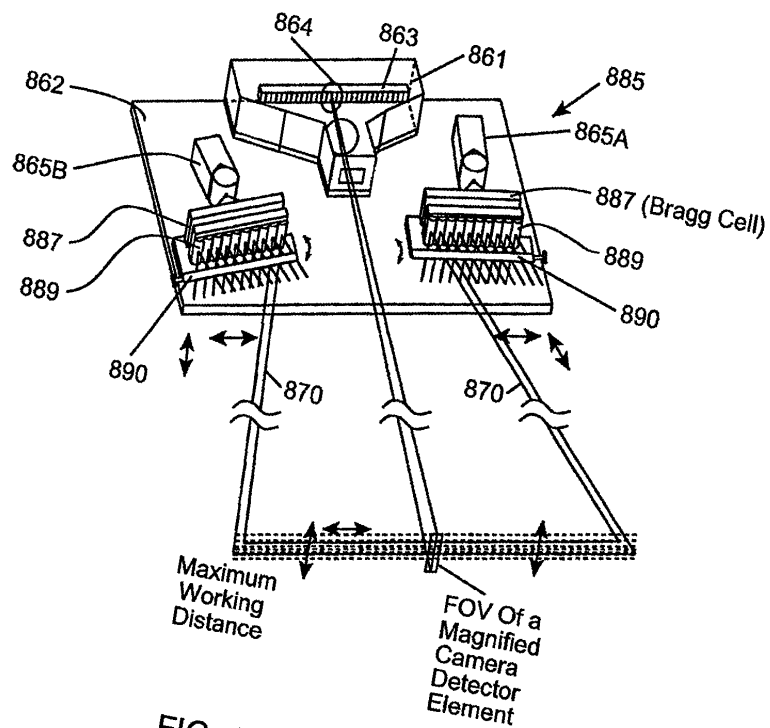


FIG. 1125C1

* Lateral And Transverse Micro-oscillation Of PLIB

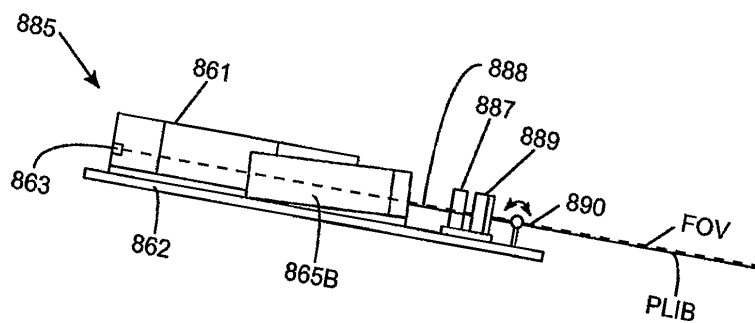
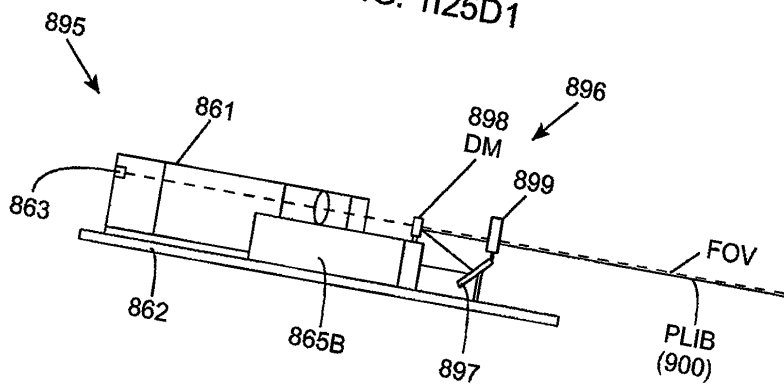
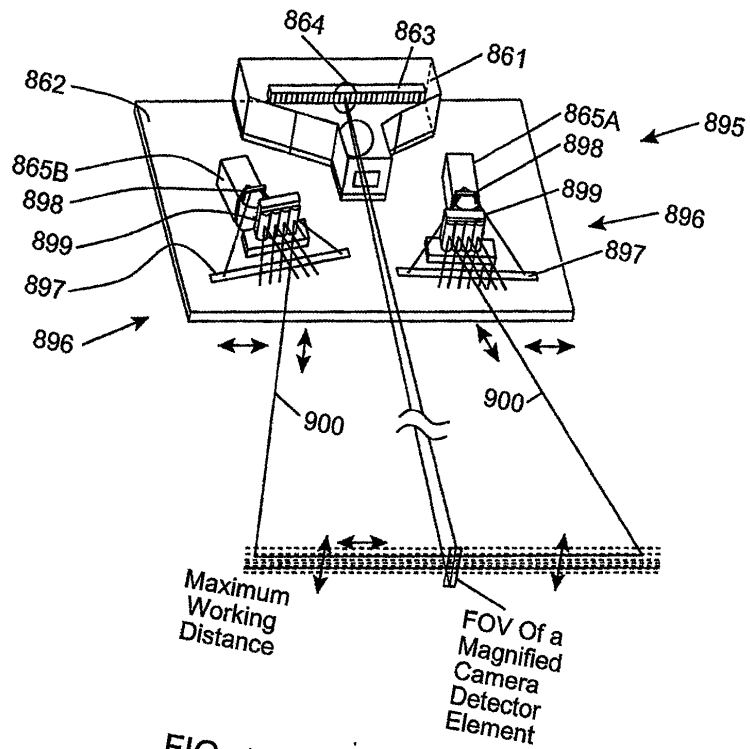


FIG. 1125C2



2007-07-20



2007-01-12 10:00:00

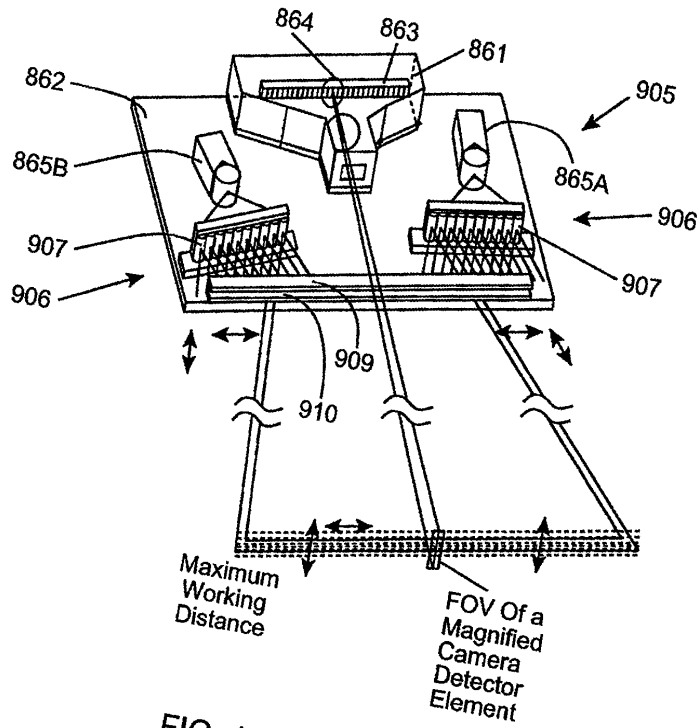


FIG. 1125E1

* Lateral And Transverse Micro-oscillation Of PLIB

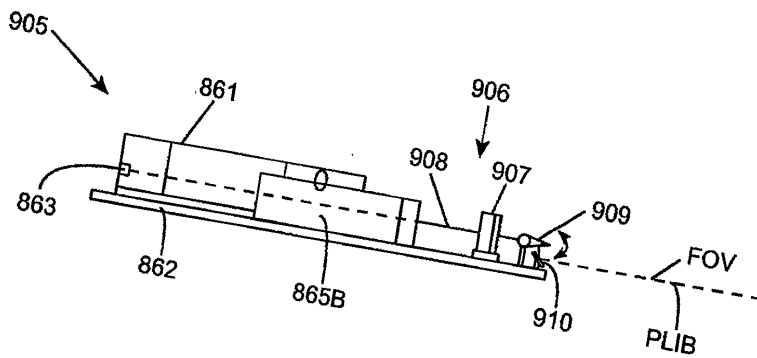


FIG. 1125E2



2002072002

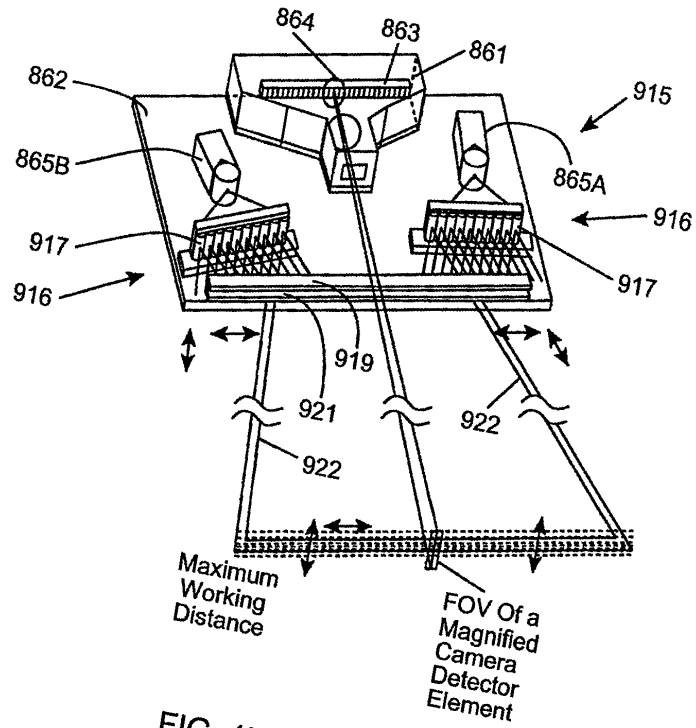


FIG. 1I25F1

* Lateral And Transverse Micro-oscillation Of PLIB

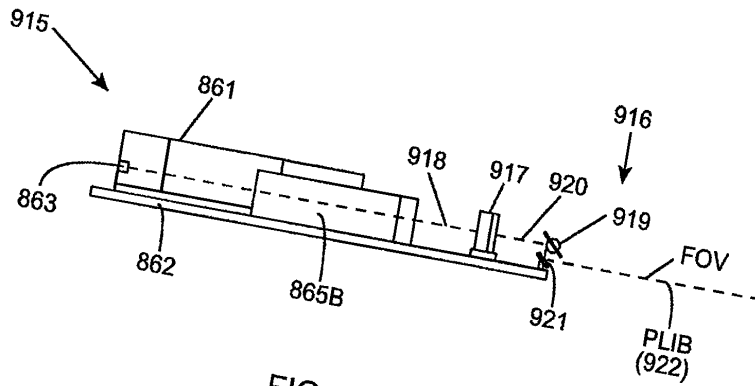


FIG. 1I25F2



2007-07-20

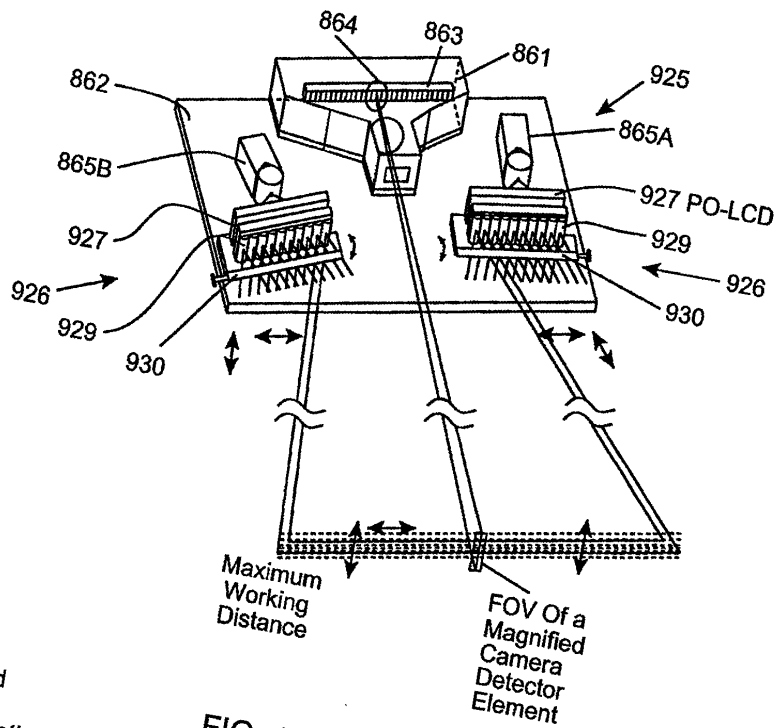


FIG. 1I25G1

* Lateral And Transverse Micro-oscillation Of PLIB

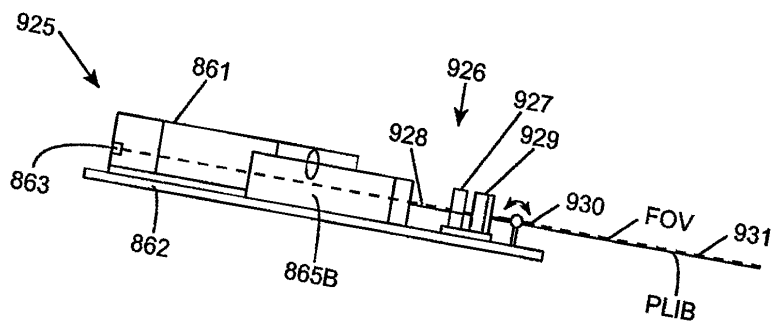
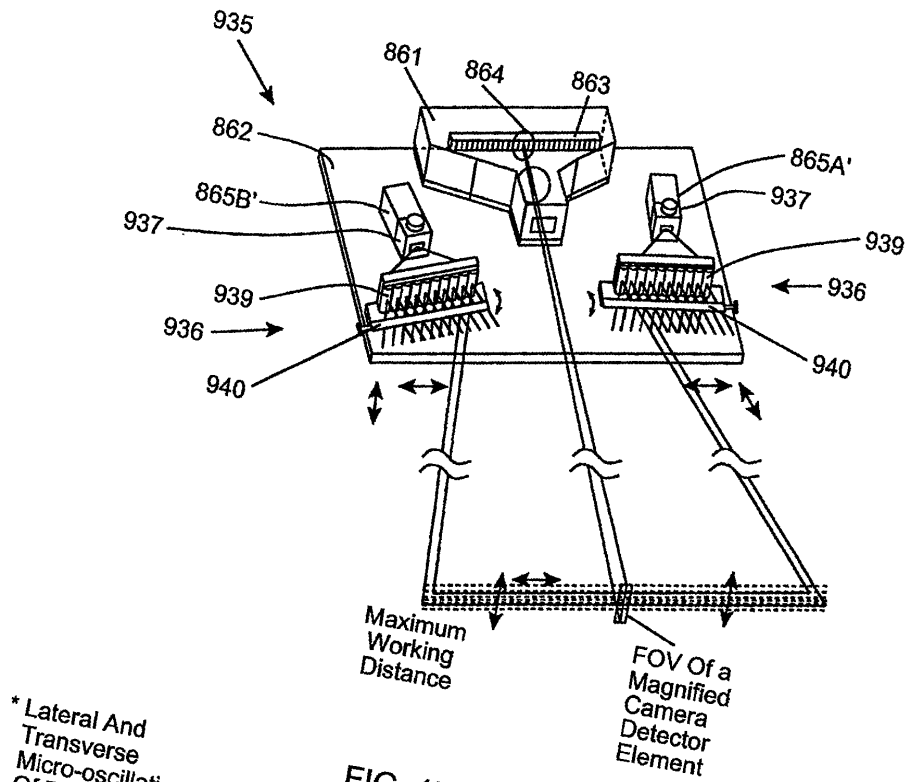


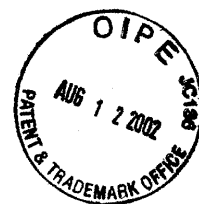
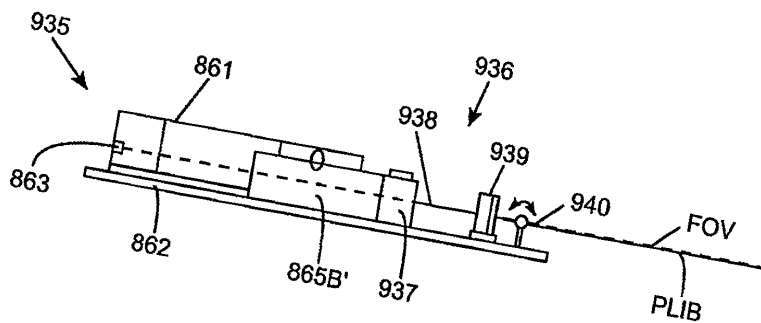
FIG. 1I25G2



2002-08-01



* Lateral And Transverse Micro-oscillation Of PLIB



202780-047-0007

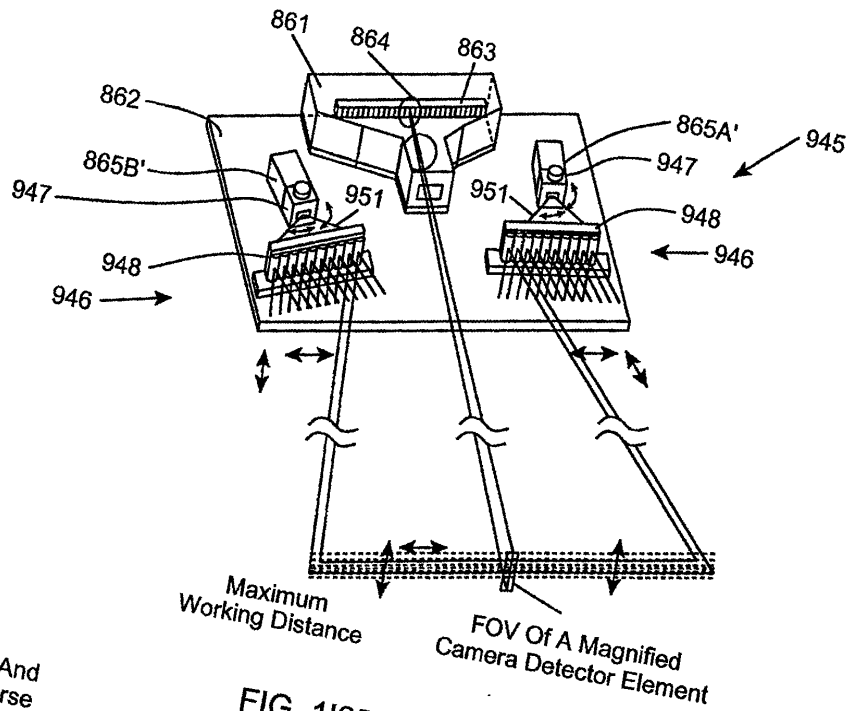


FIG. 112511

* Lateral And Transverse Micro-oscillation Of PLIB

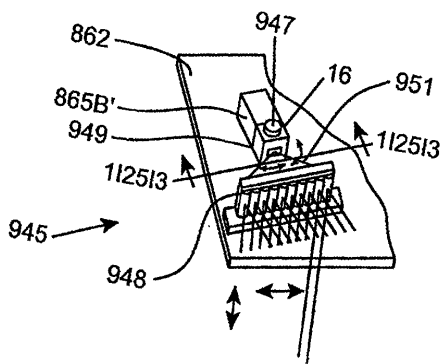


FIG. 112512

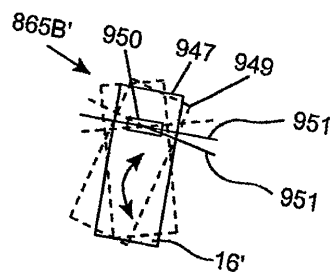


FIG. 112513



2002-07-22

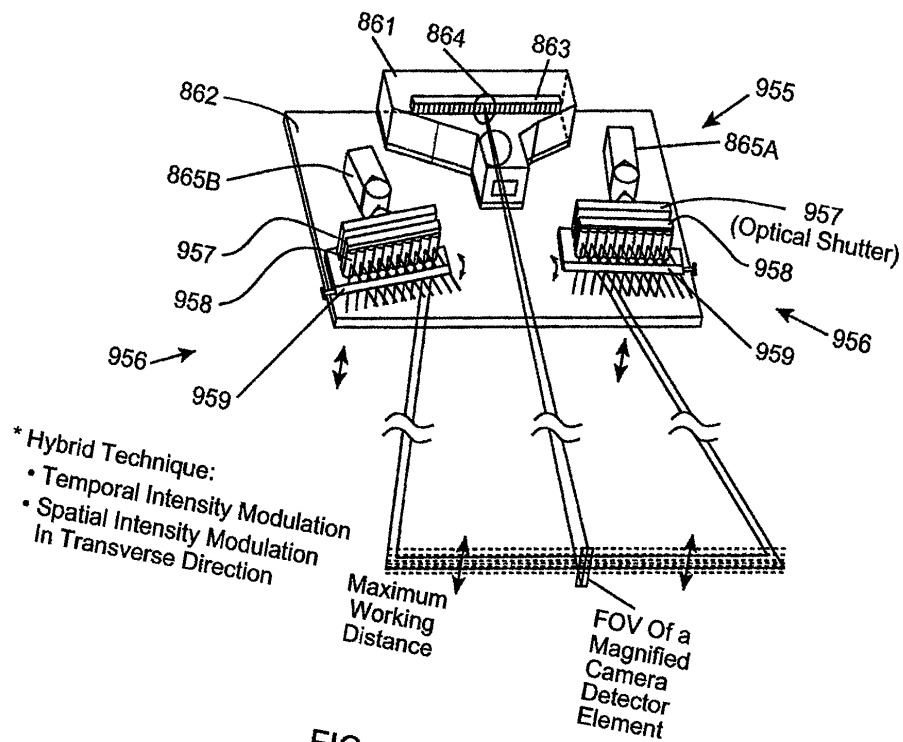


FIG. 1I25J1

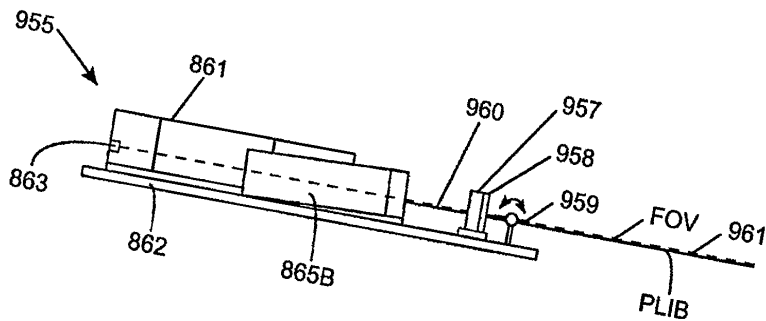


FIG. 1I25J2



2002140-0012001

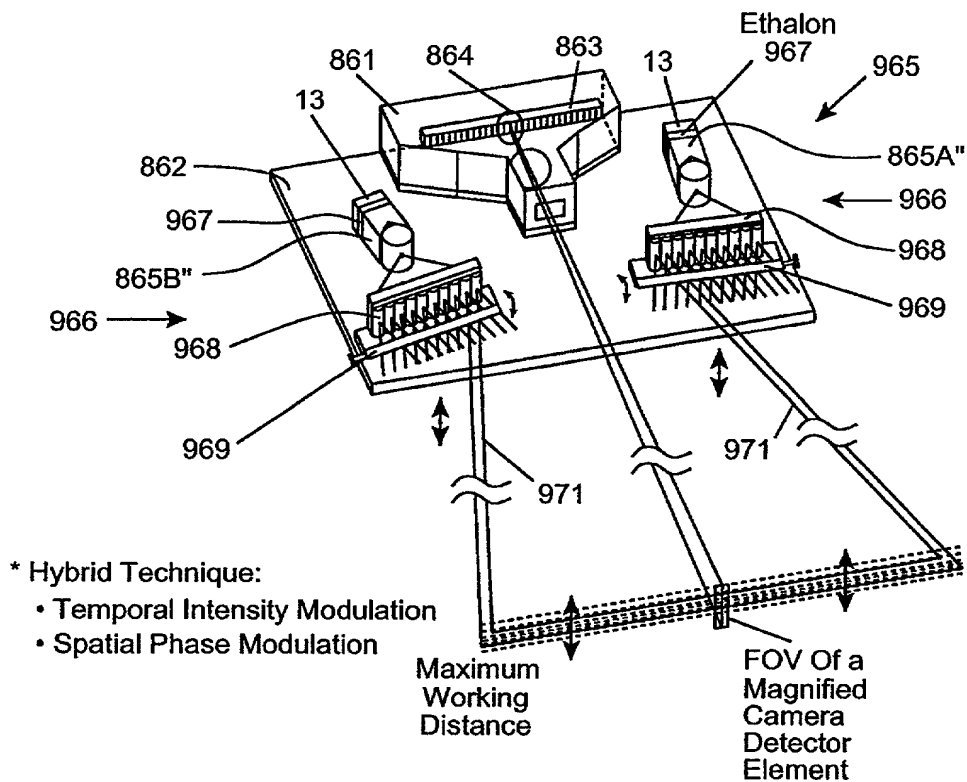


FIG. 1I25K1

* Transverse Micro-oscillation Of PLIB

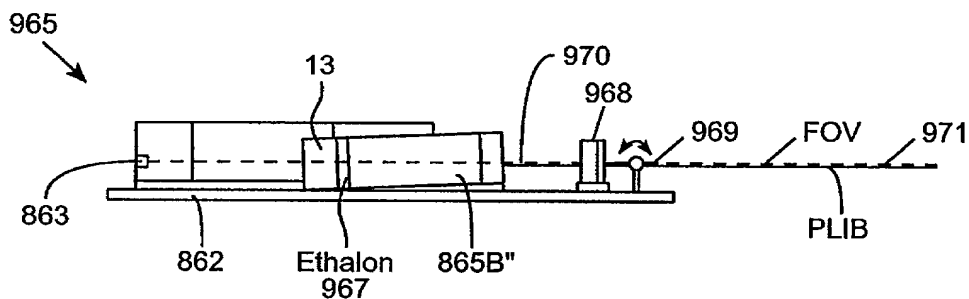
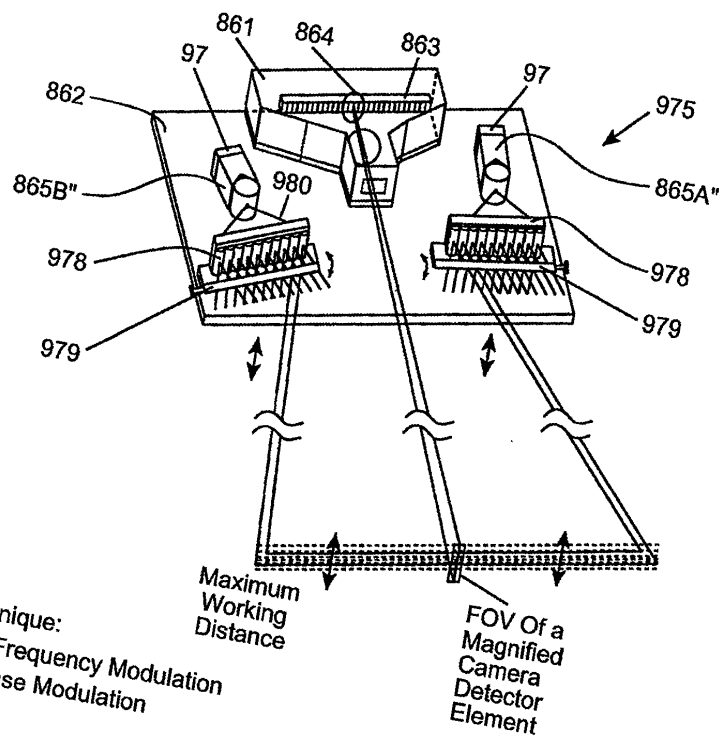


FIG. 1I25K2



2004-07-20



- * Hybrid Technique:
- Temporal Frequency Modulation
 - Spatial Phase Modulation

* Transverse Micro-oscillation Of PLIB

FIG. 1I25L1

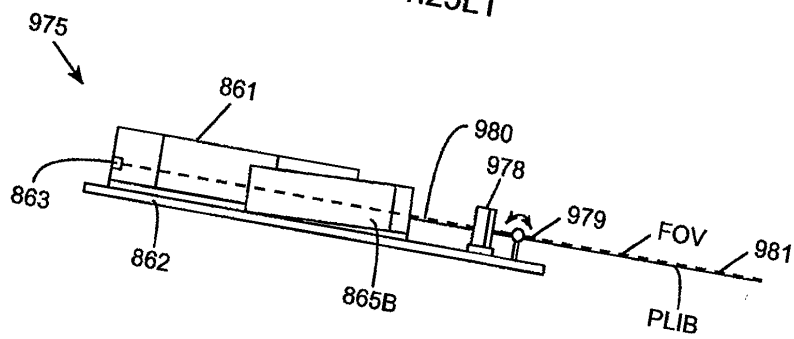
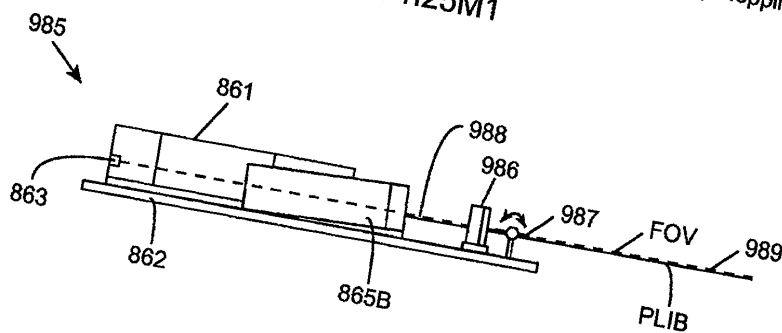
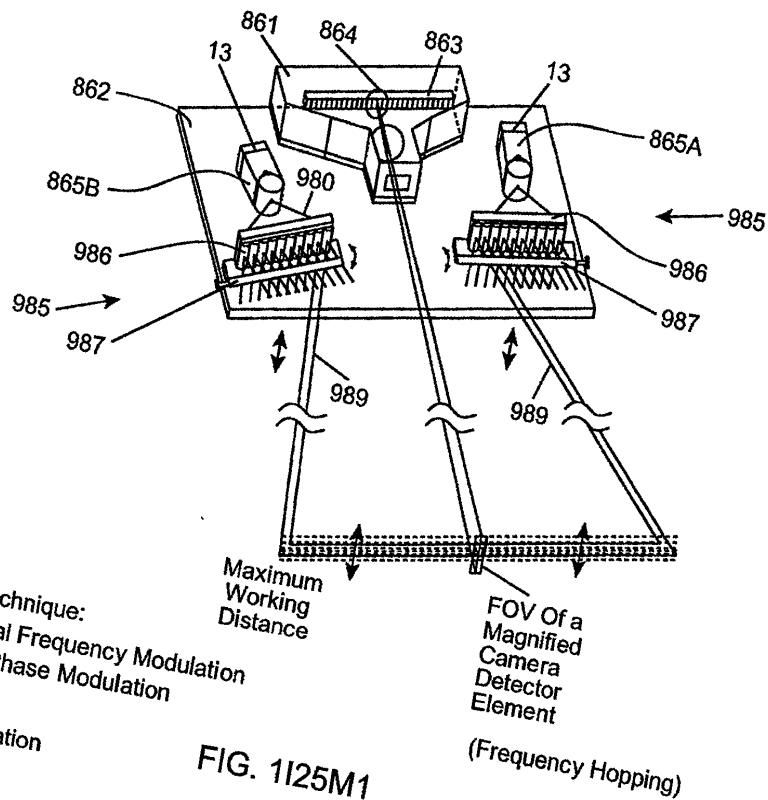


FIG. 1I25L2



2002-01-20



2002-08-01

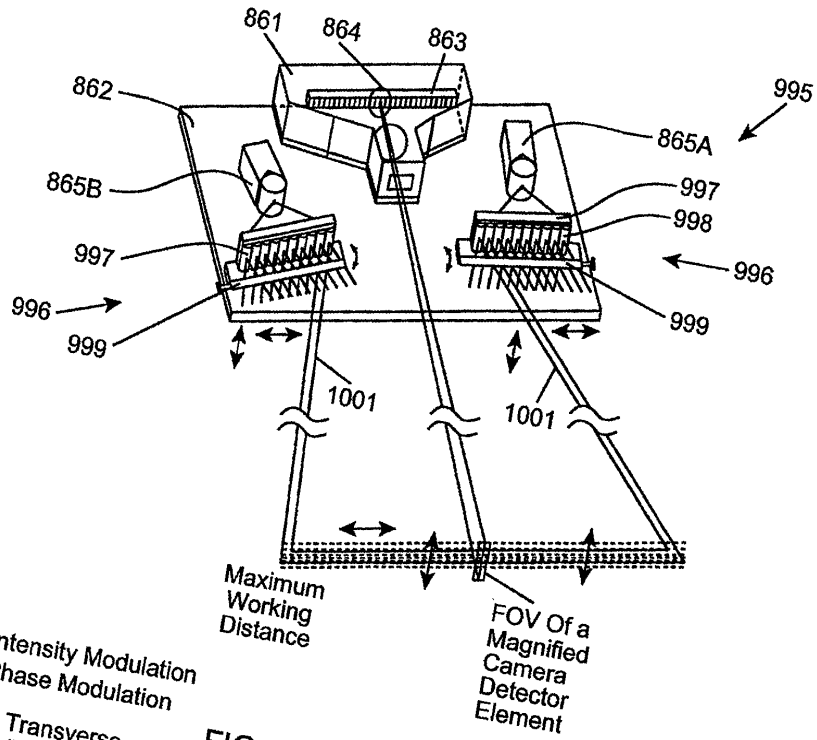


FIG. 1I25N1

- * Hybrid:
 - Spatial Intensity Modulation
 - Spatial Phase Modulation
- * Lateral And Transverse Micro-oscillation Of PLIB

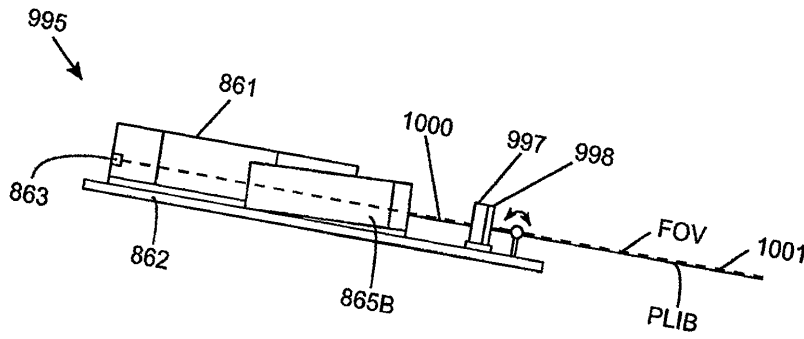


FIG. 1I25N2



Fixed Focal Length
Lens Cases

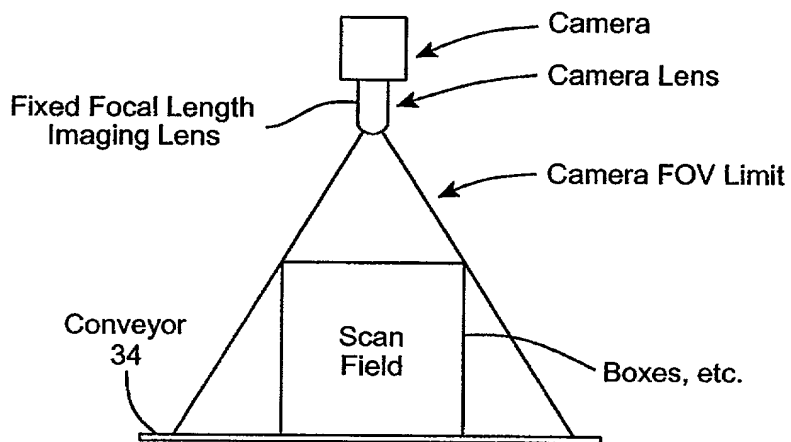


FIG. 1K1

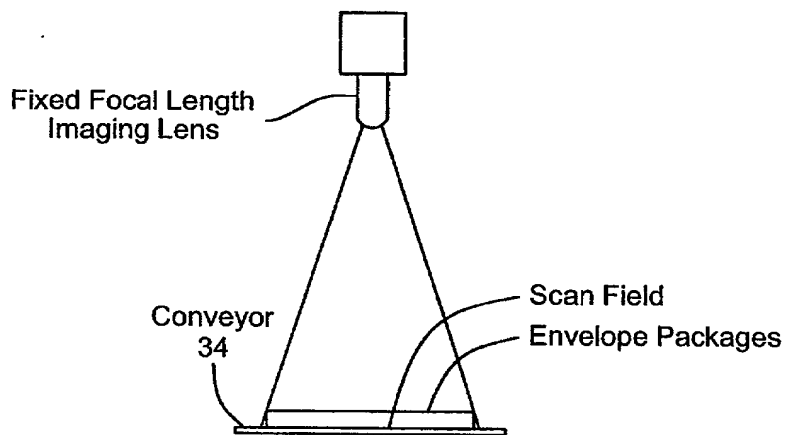


FIG. 1K2



202180-04129001

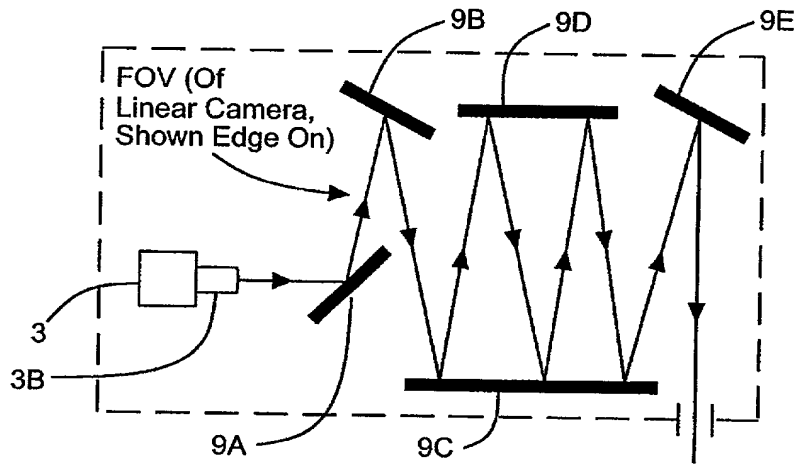


FIG. 1L1

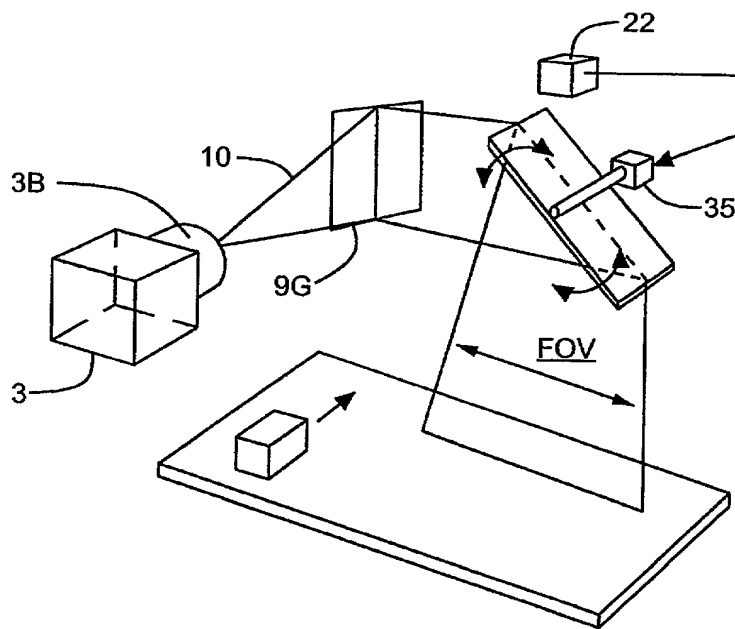


FIG. 1L2



2002F00004729001

Pixel Power Density vs. Object Distance (General Example)

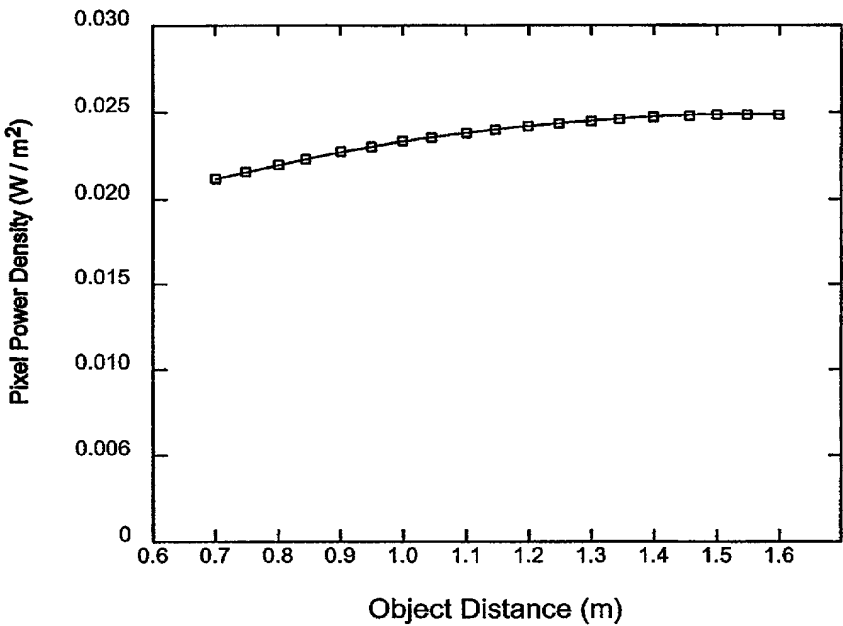


FIG. 1M1



202100-04129001

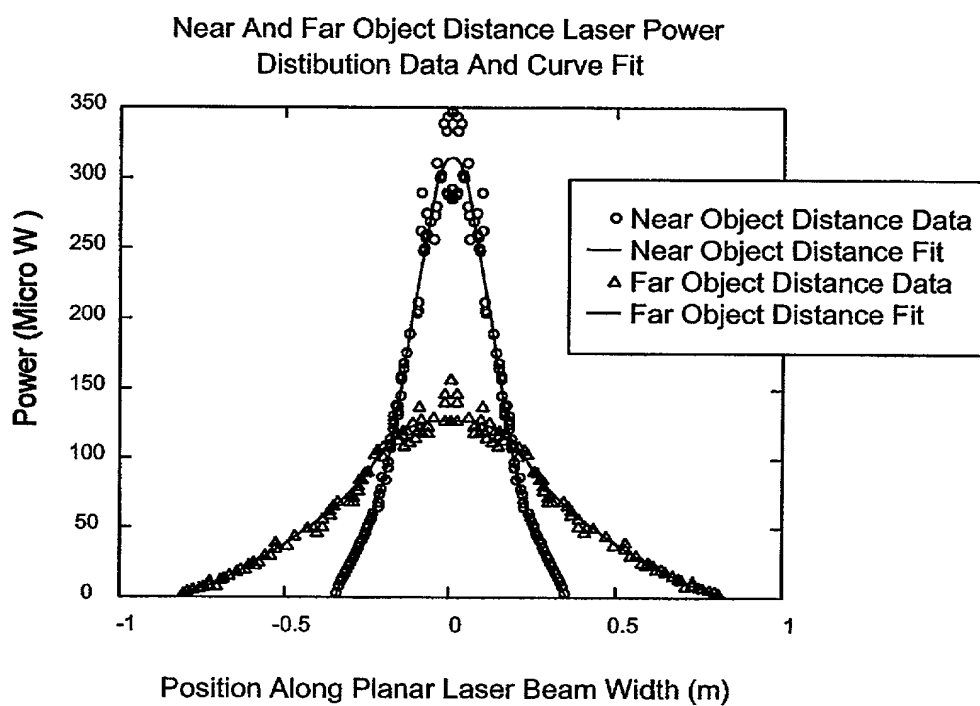


FIG. 1M2



20020723001

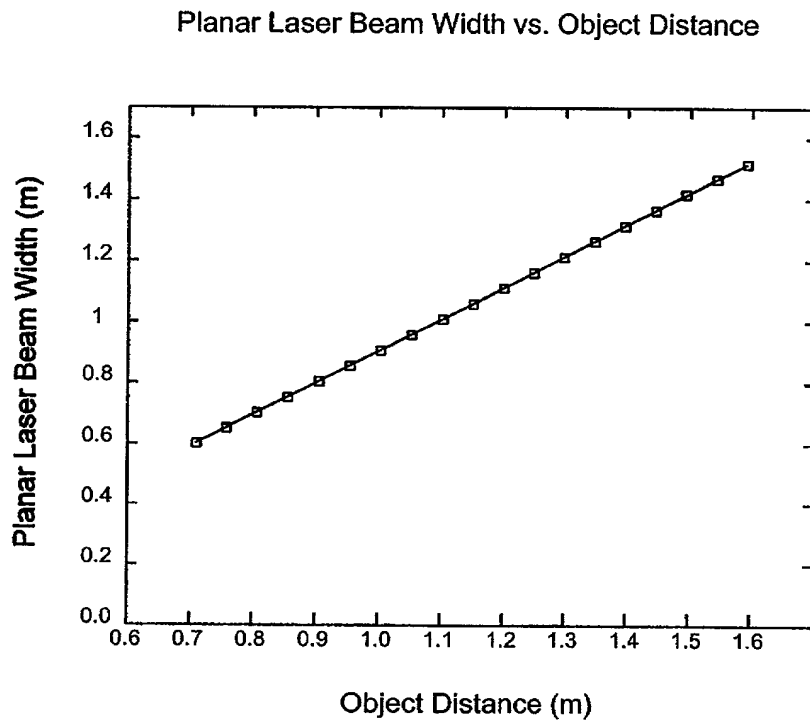


FIG. 1M3



20250704 04:29:07

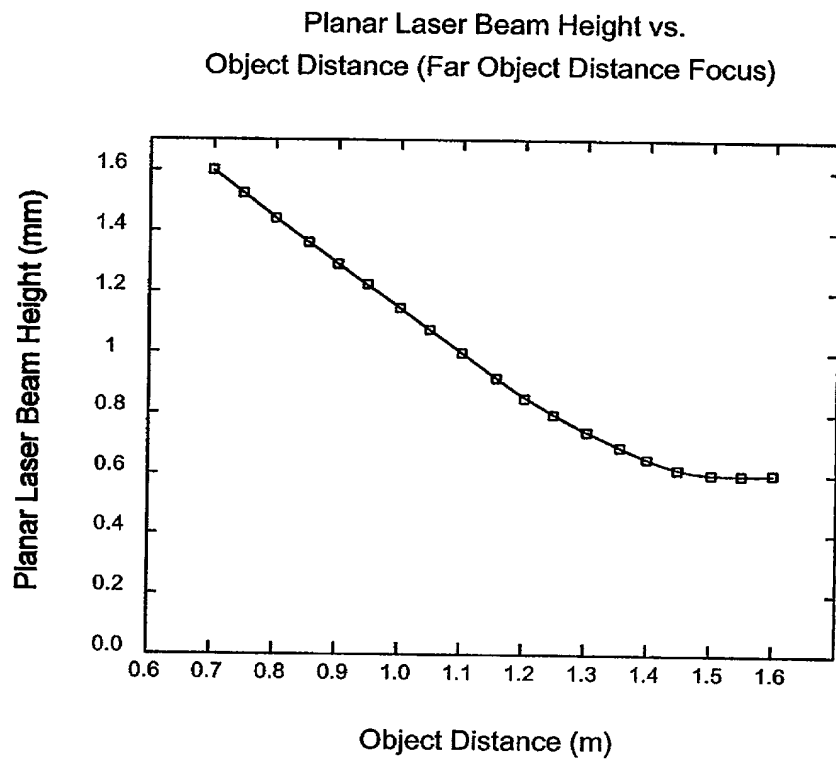
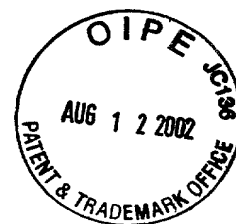


FIG. 1M4



202130-011/3001

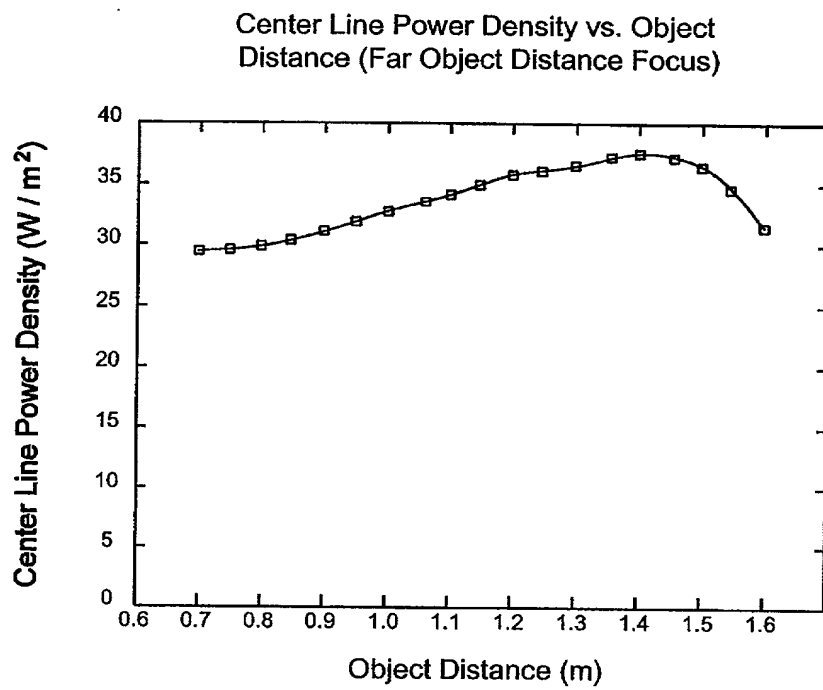


FIG. 1N



20020801 041729001

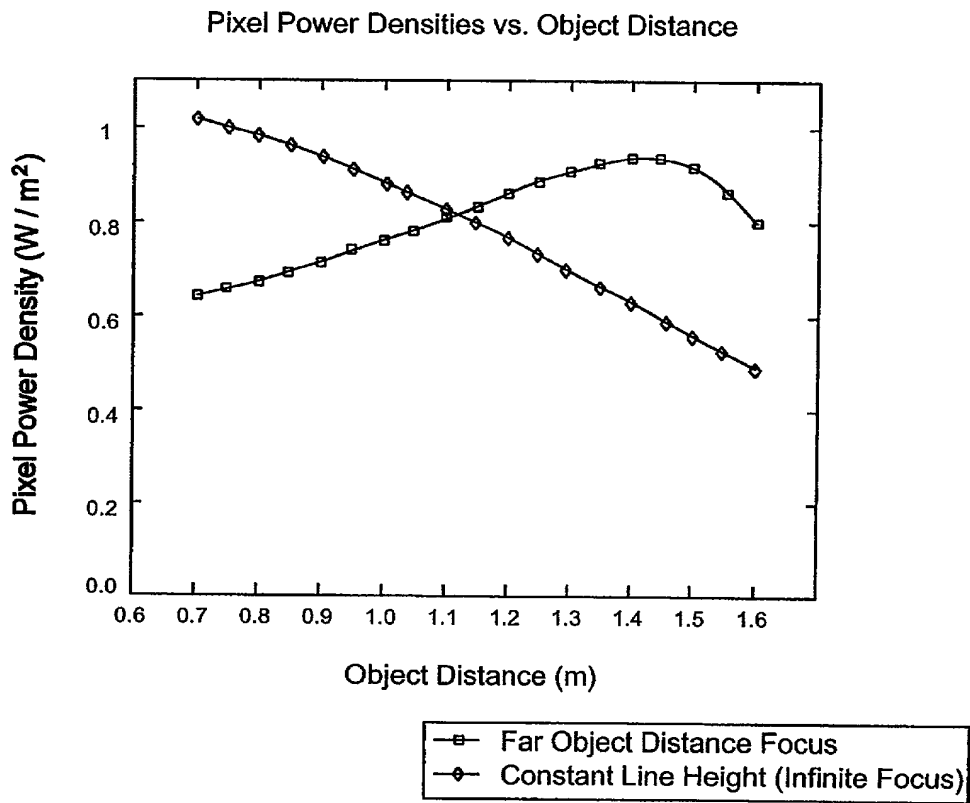


FIG. 10



202180 "041/300T

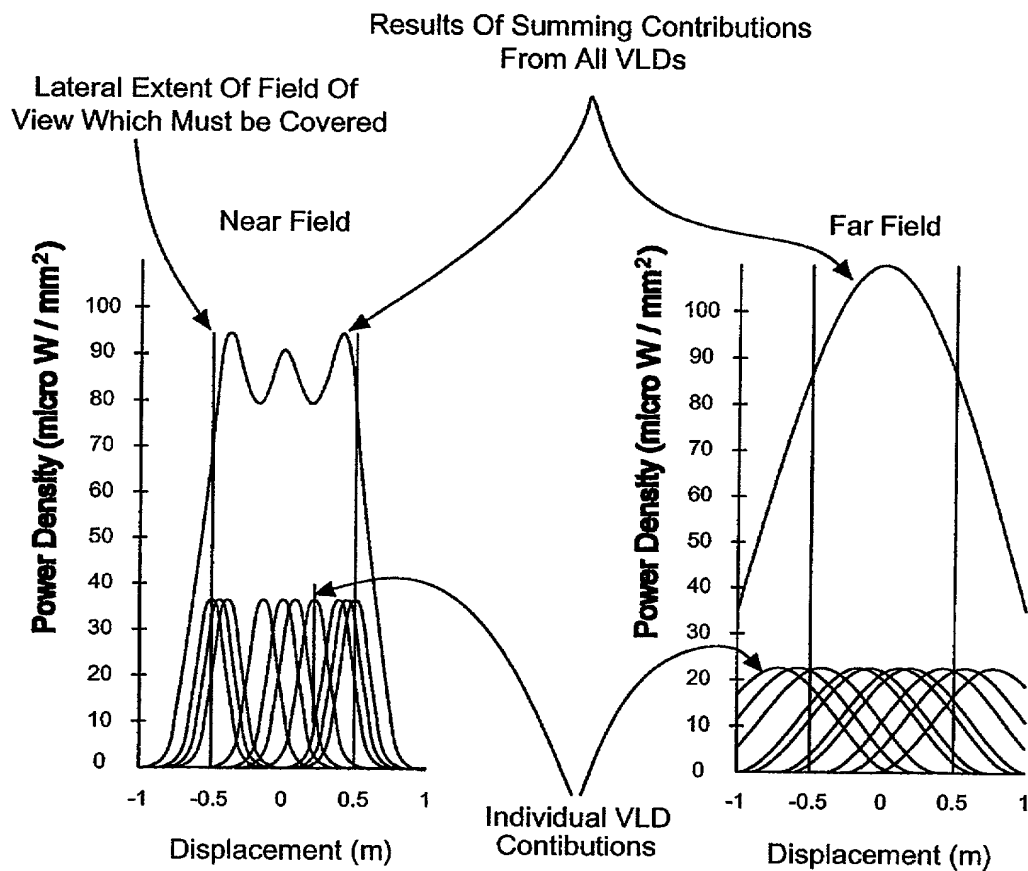


FIG. 1P1

FIG. 1P2



202180 04129007

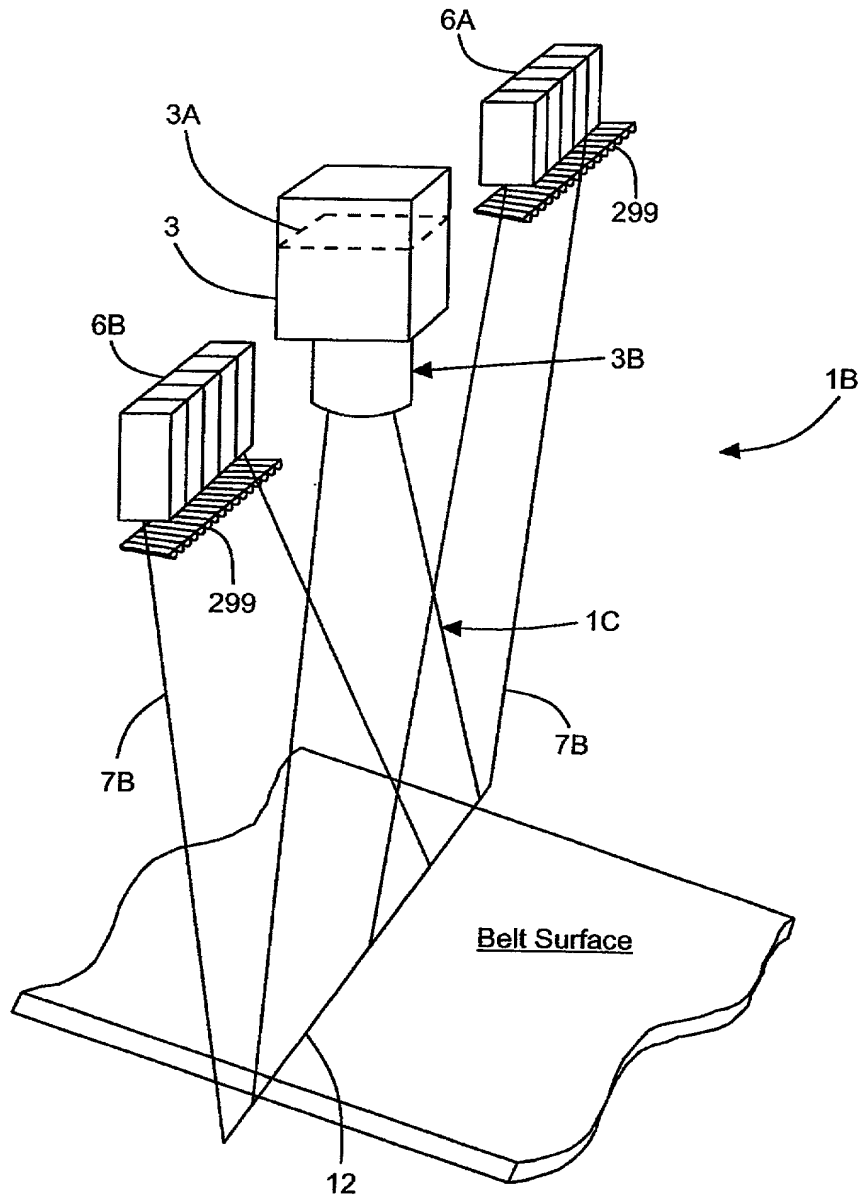


FIG. 1Q1



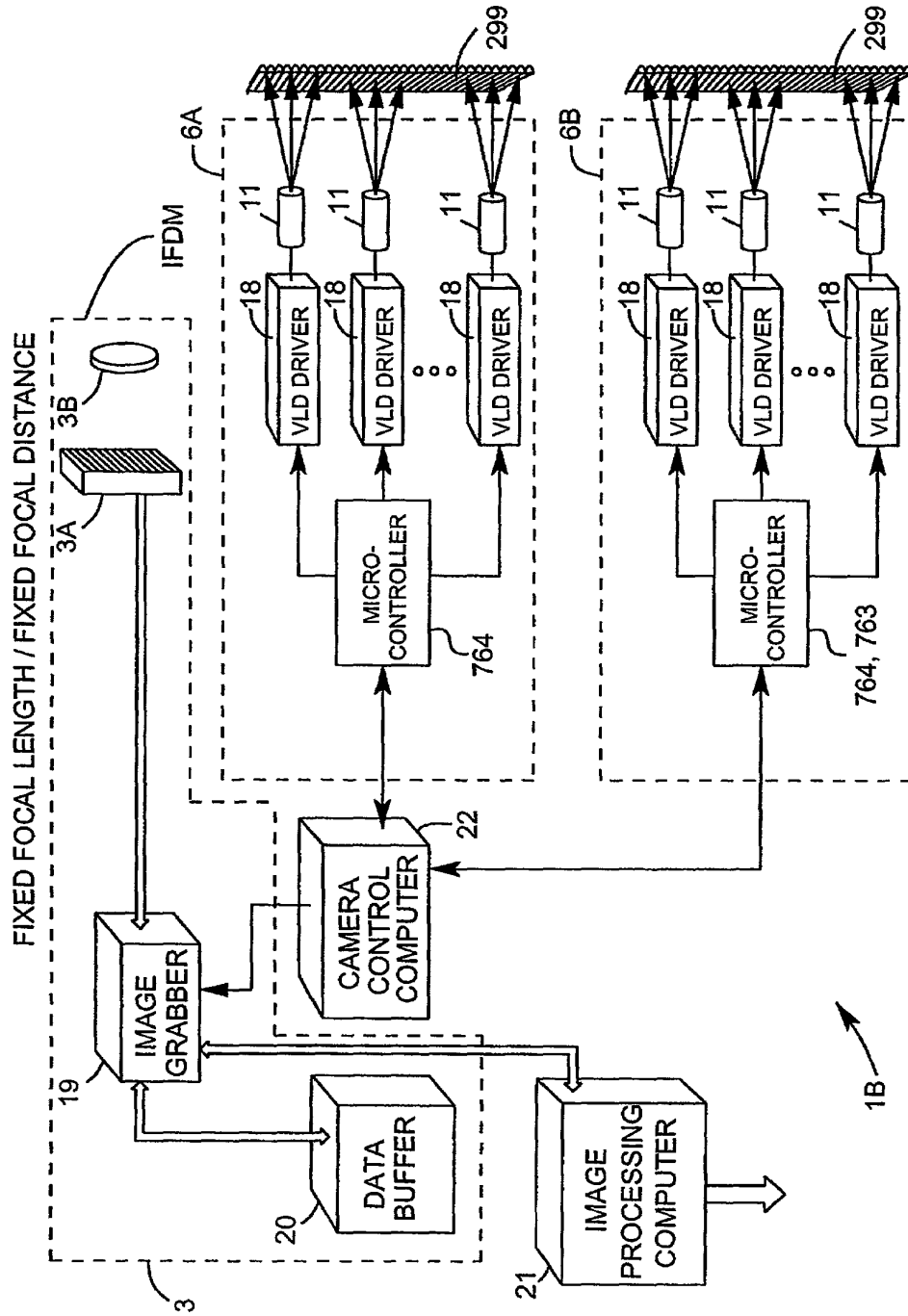


FIG. 1Q2



200207140 0001

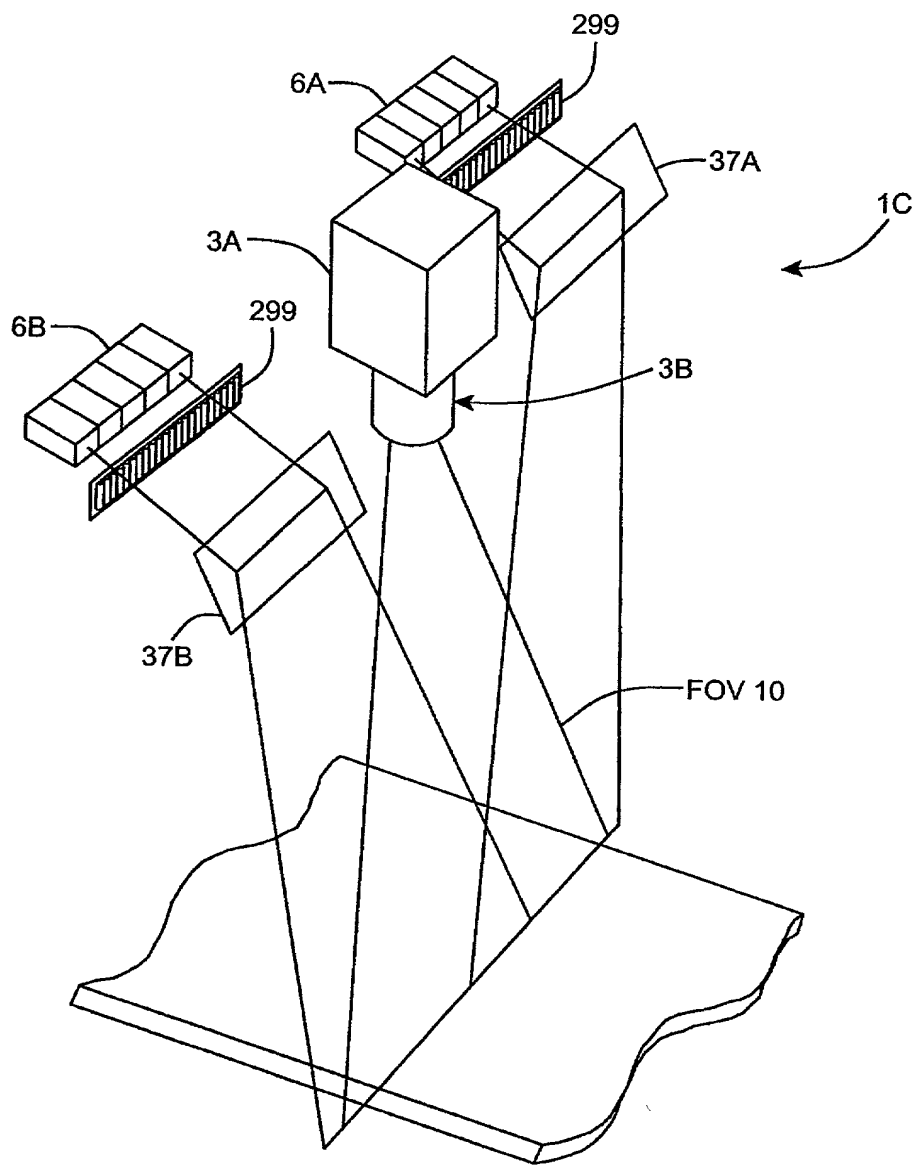
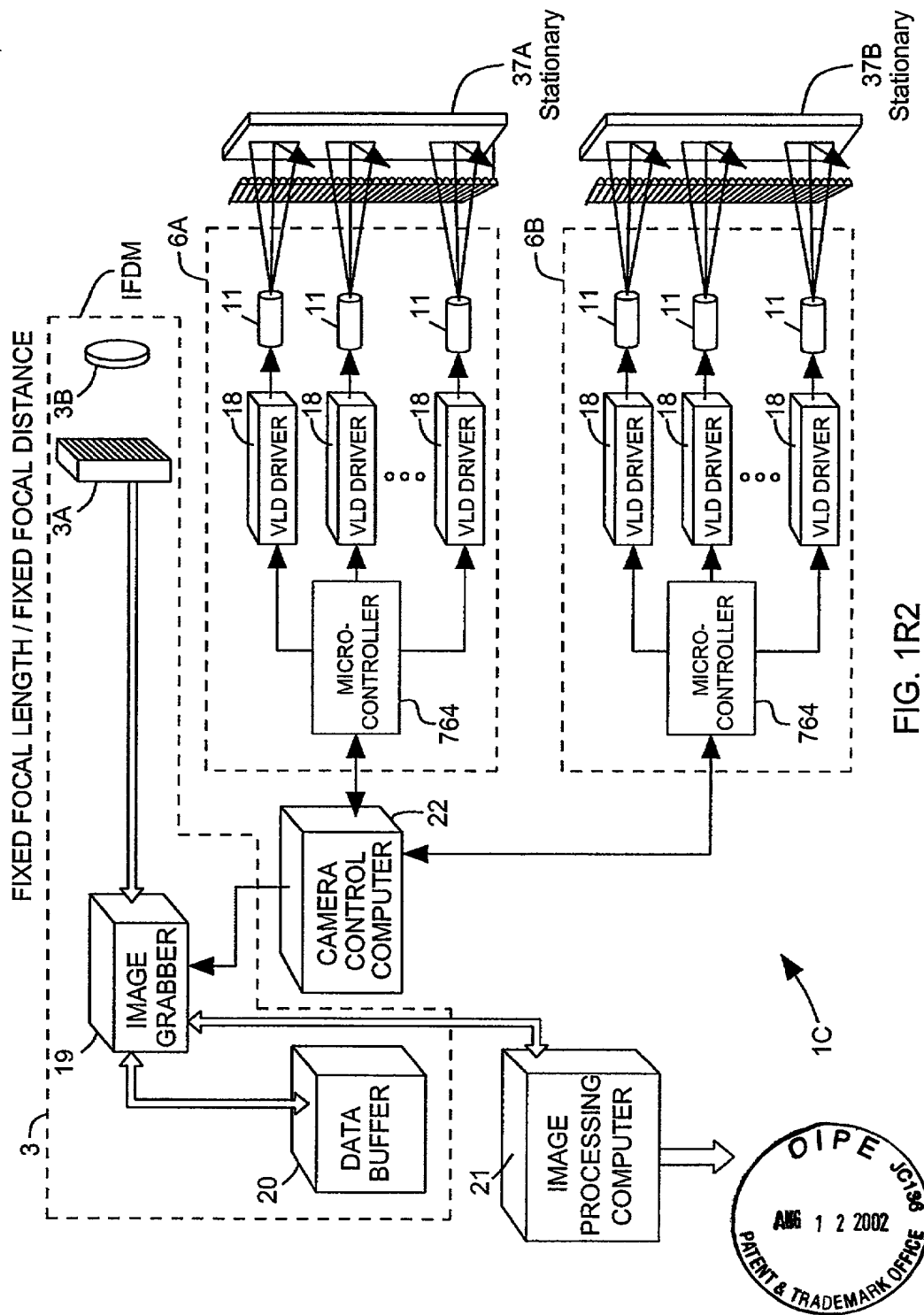


FIG. 1R1





2007-140-00001

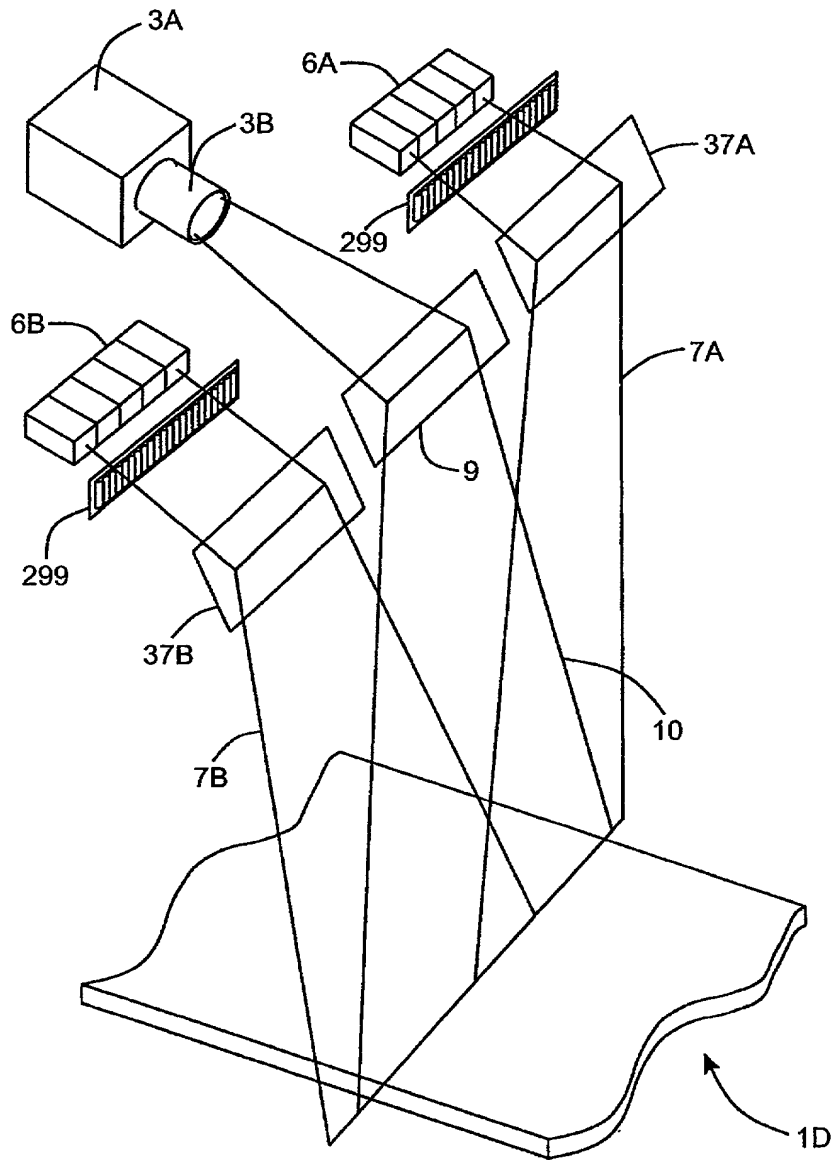


FIG. 1S1



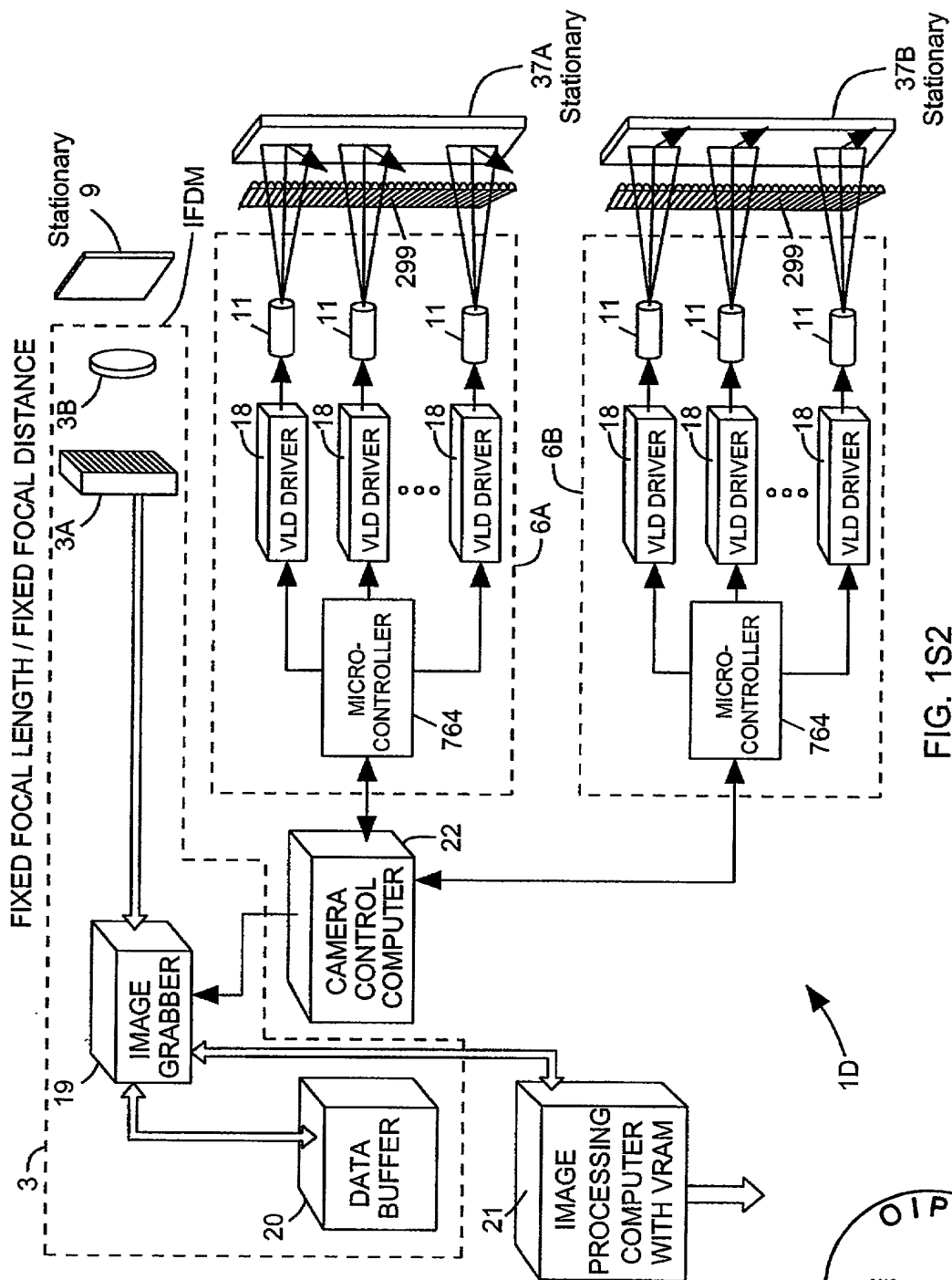


FIG. 1S2



200204125001

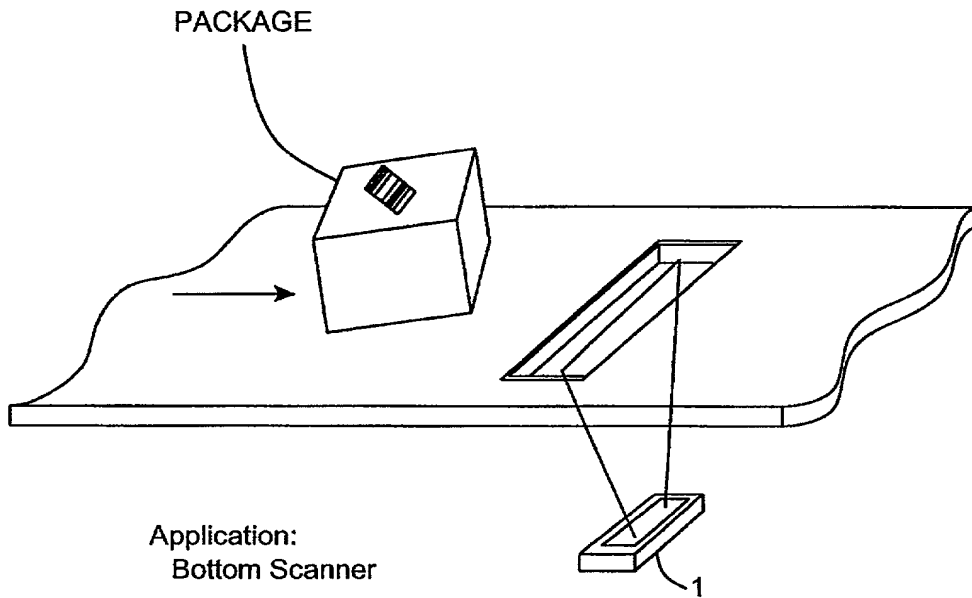


FIG. 1T



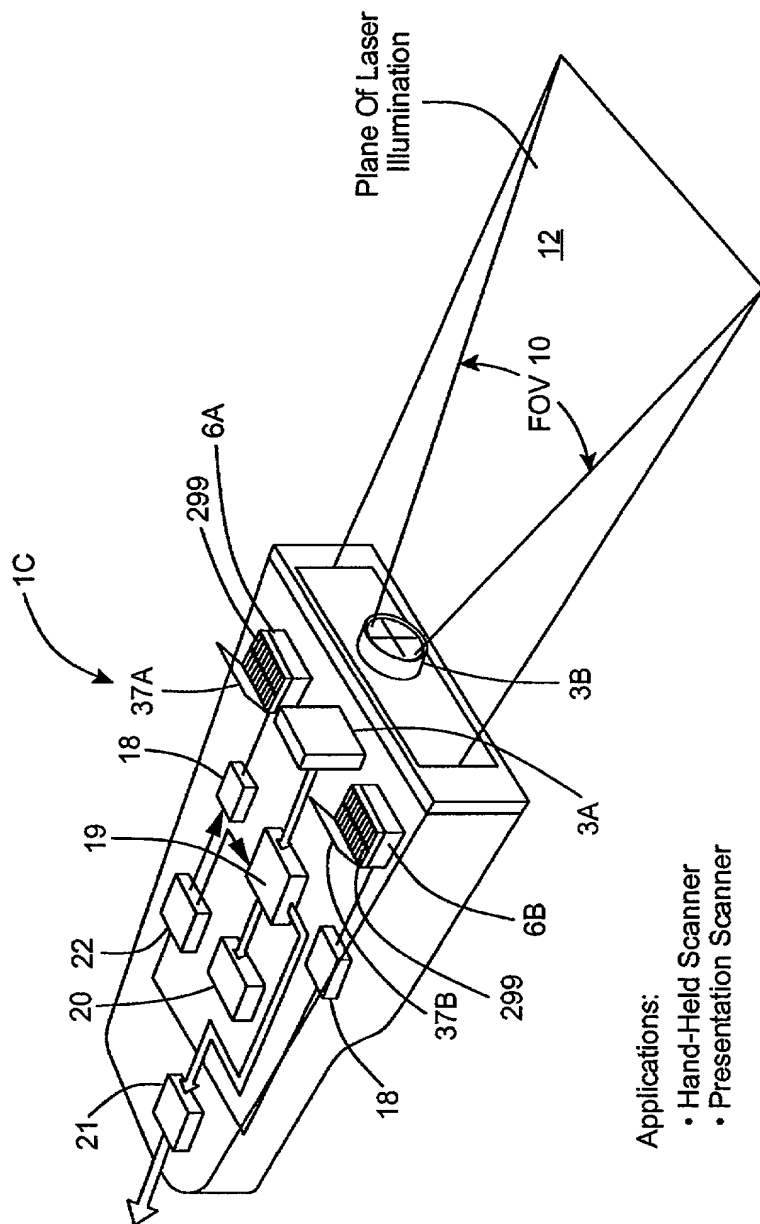
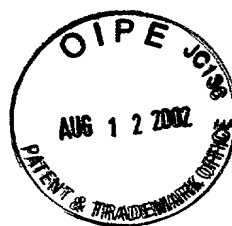


FIG. 1U



[illegible]

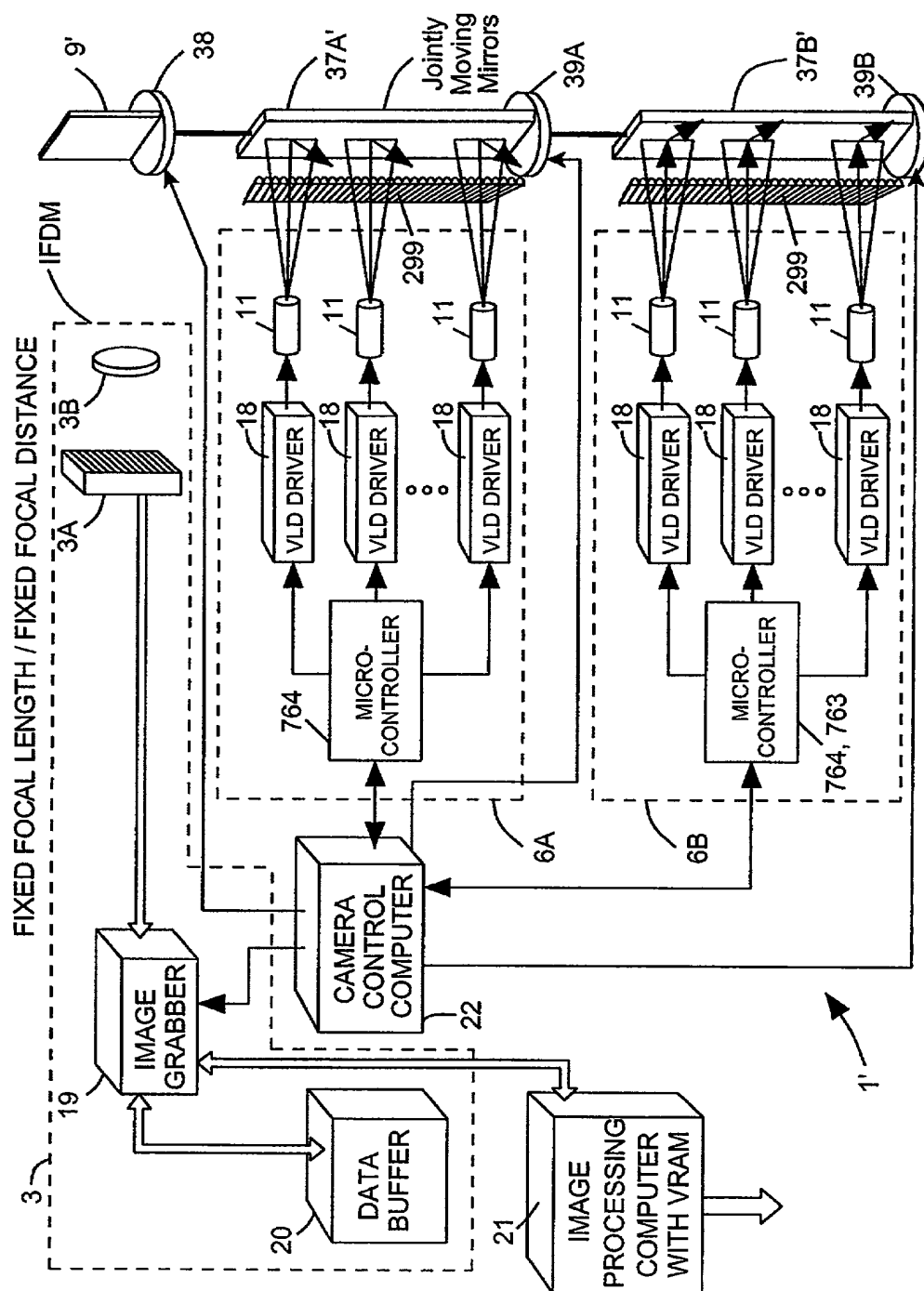


FIG. 1V3



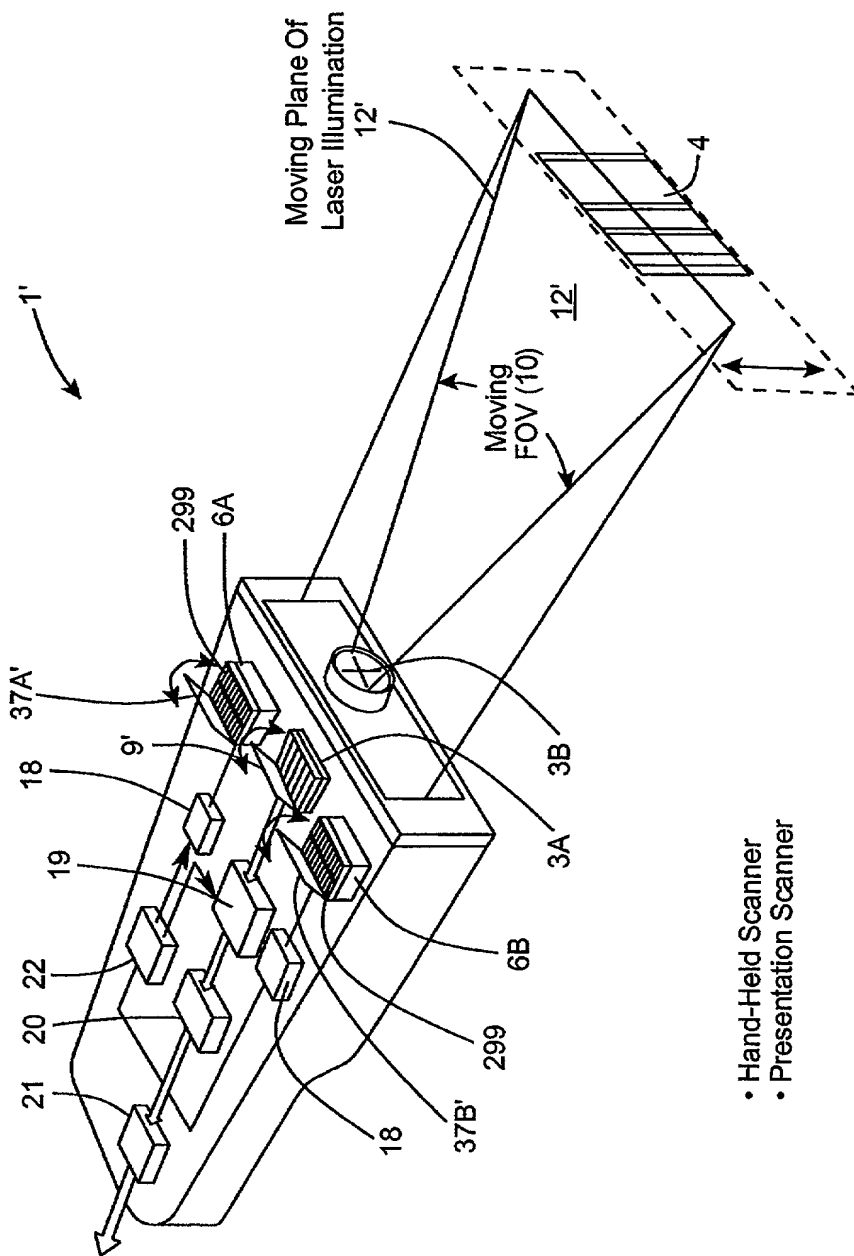


FIG. 1V4

- Hand-Held Scanner
- Presentation Scanner



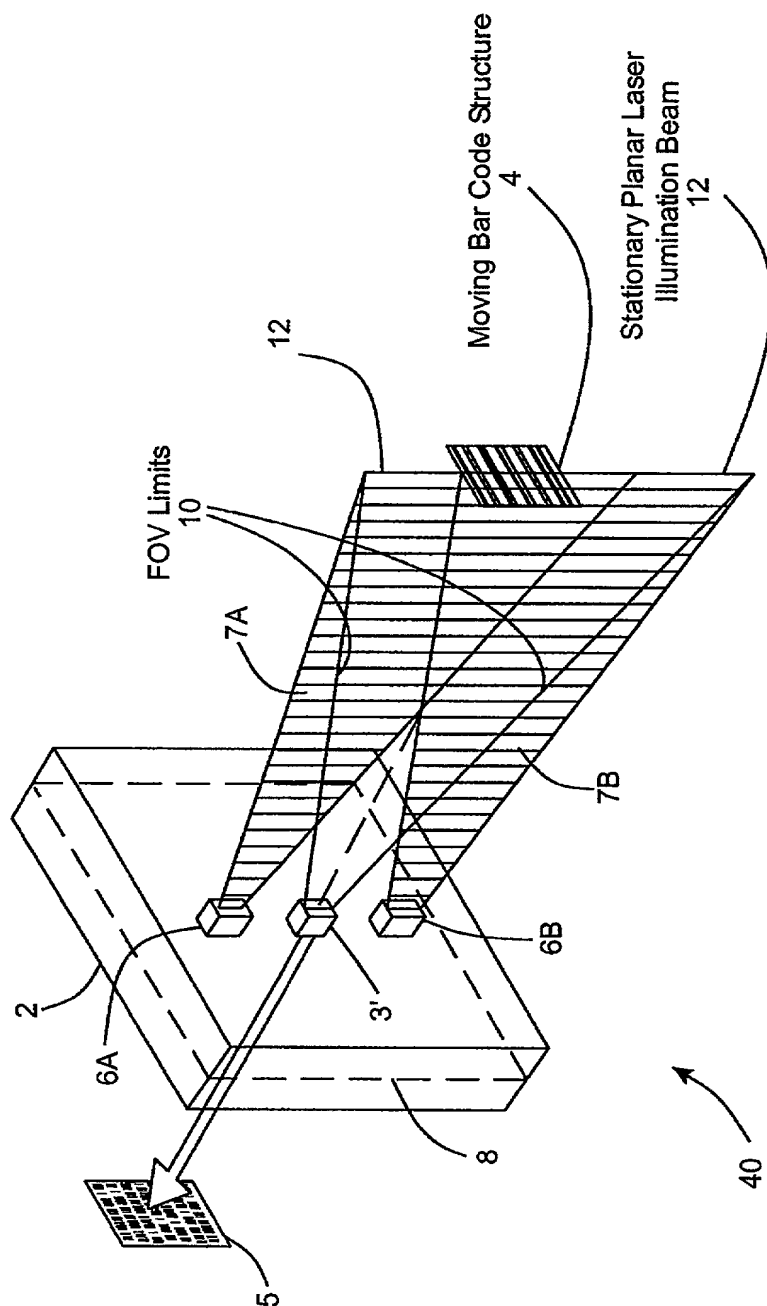


FIG. 2A



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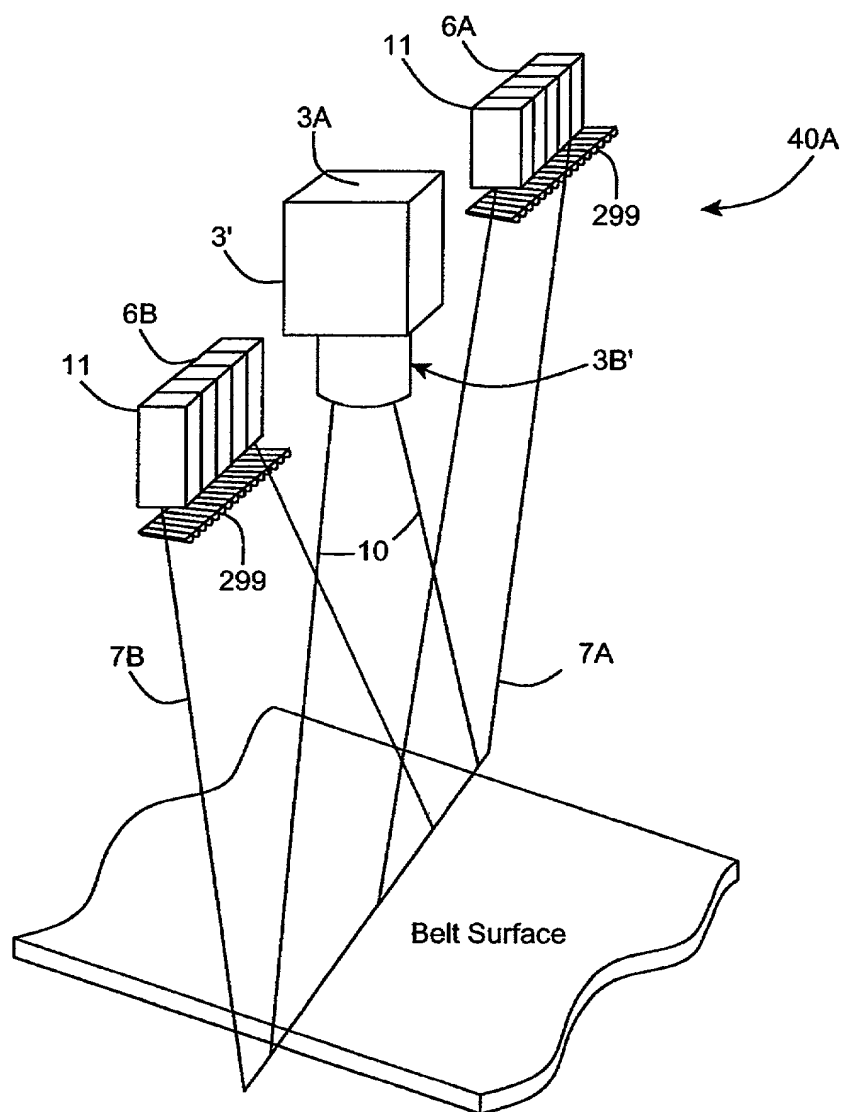
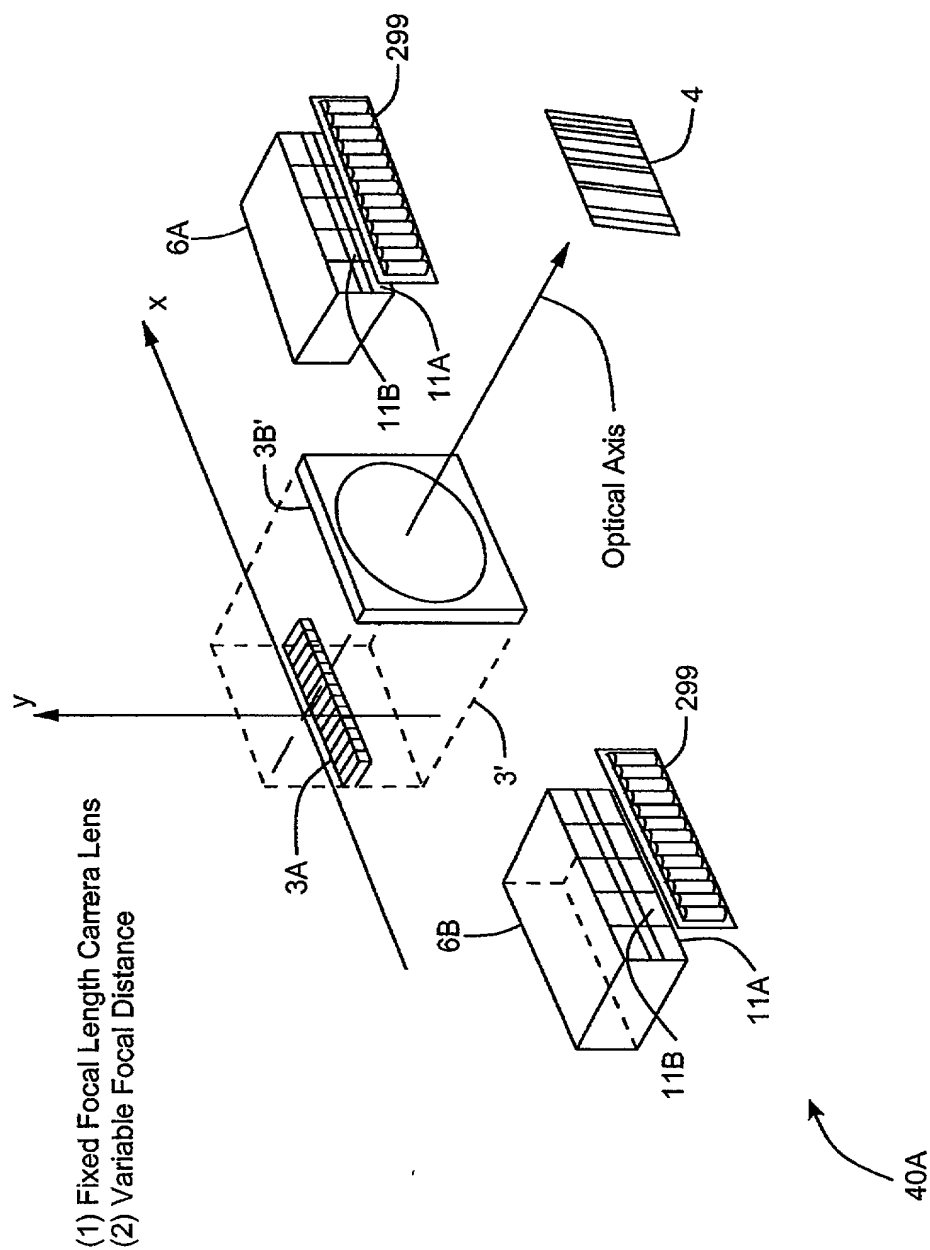


FIG. 2B1





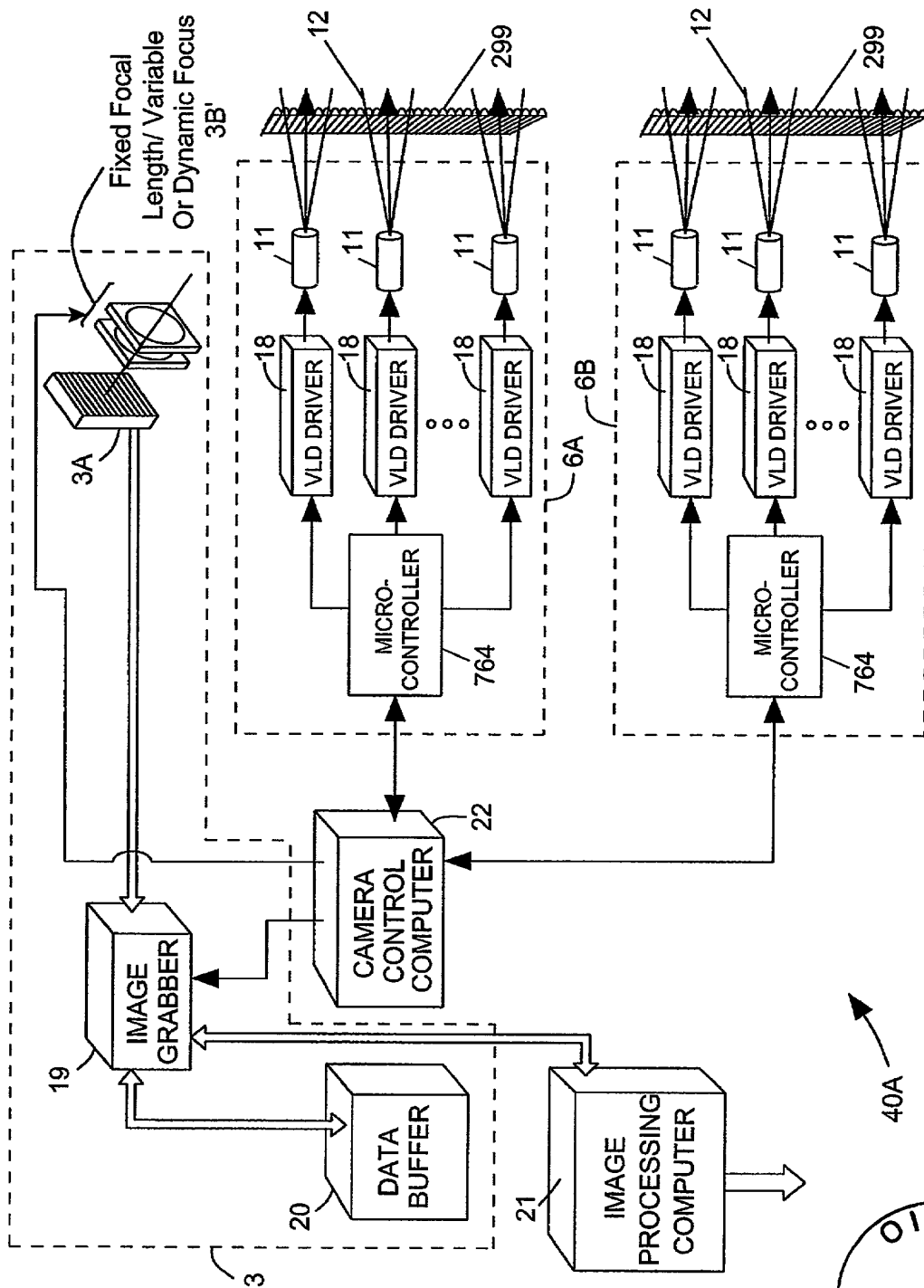


FIG. 2C1



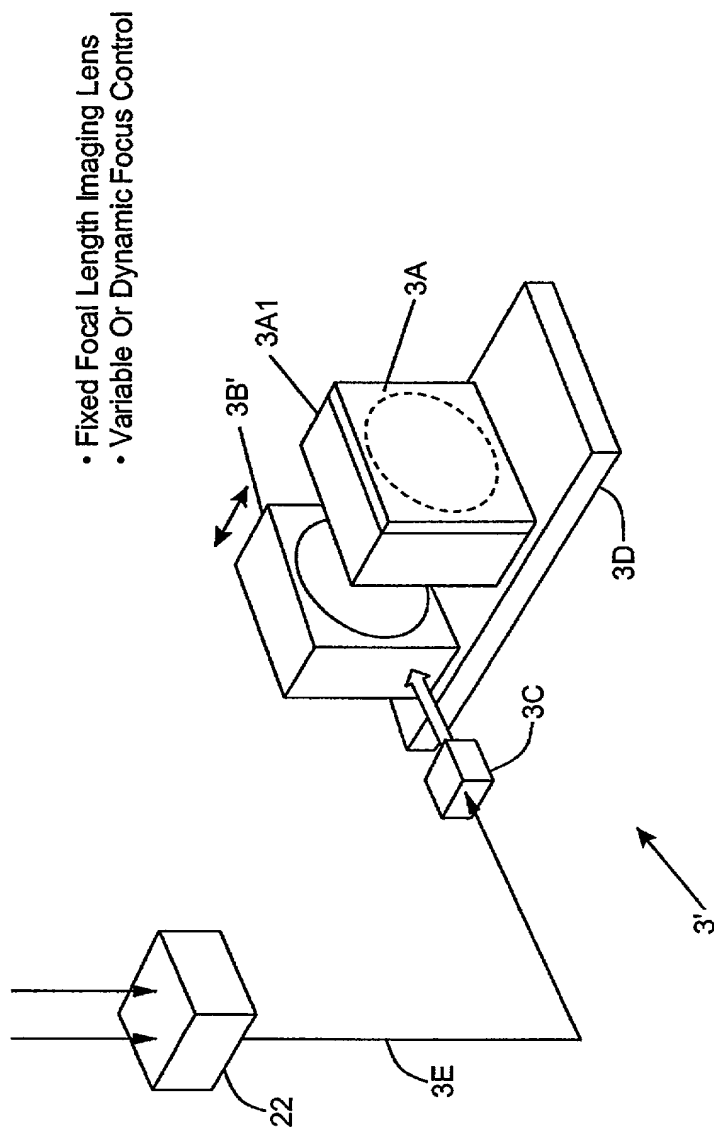
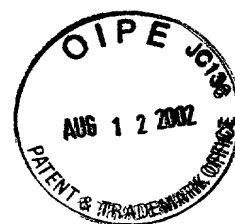
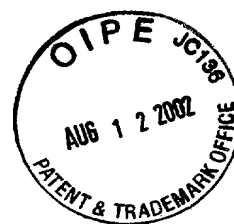
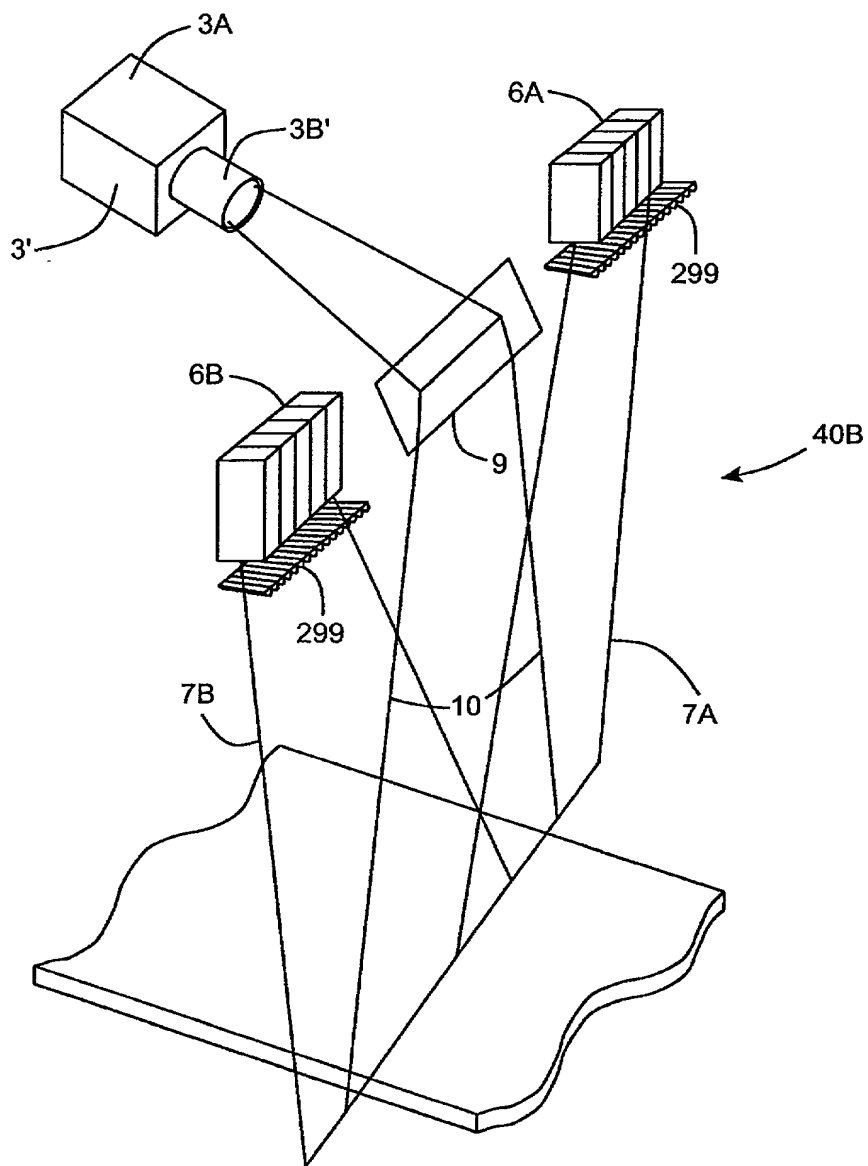


FIG. 2C2



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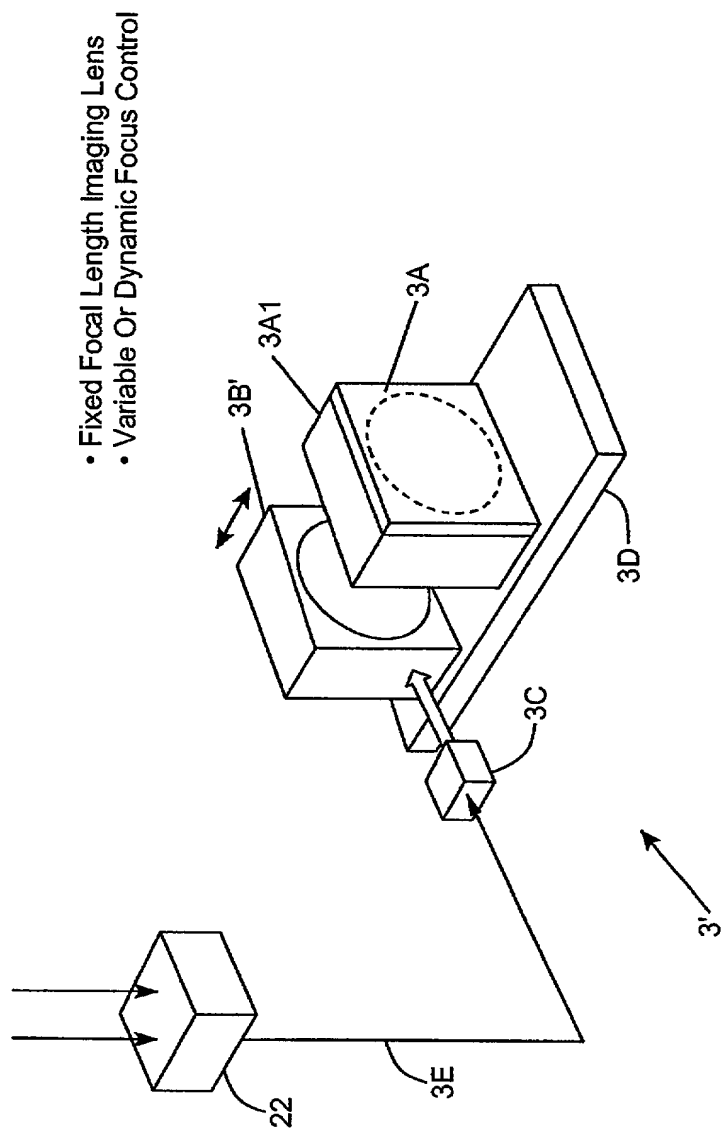
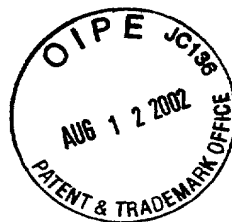


FIG. 2D3



202180-04129001

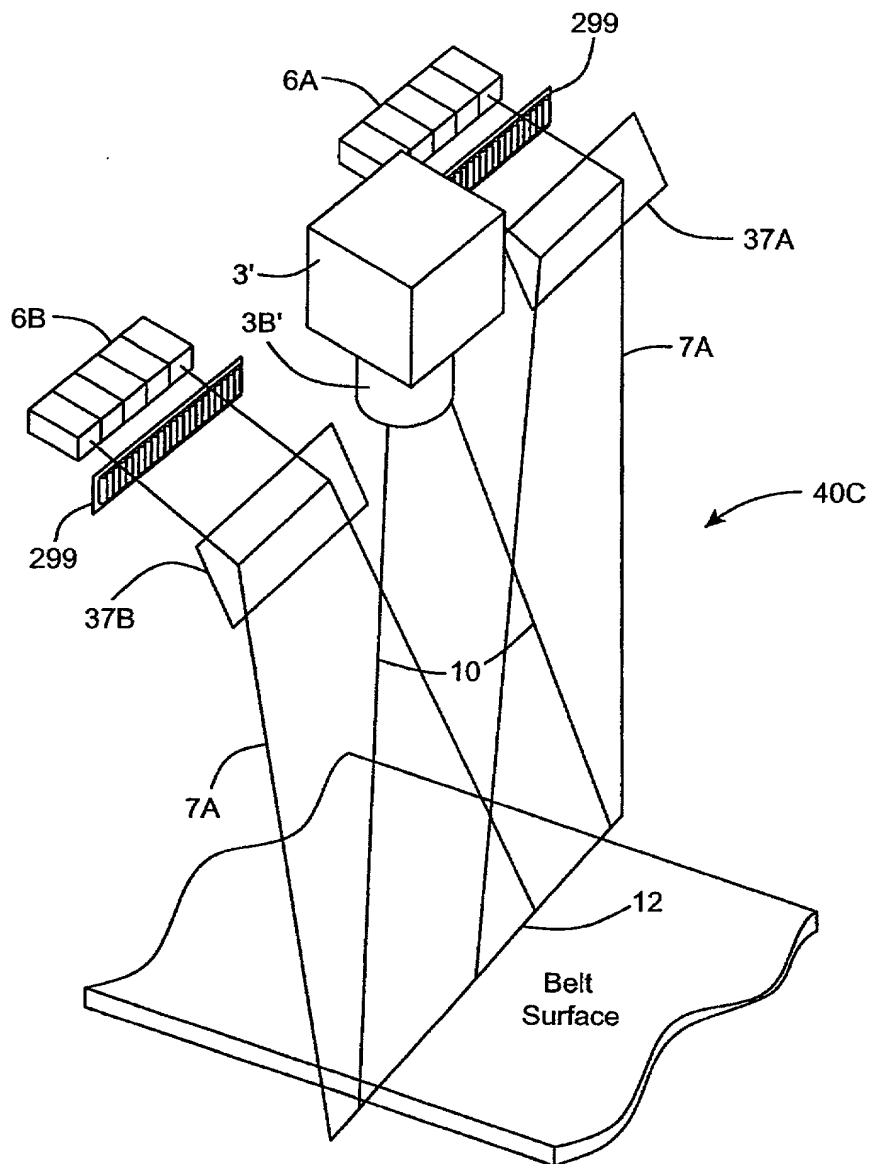
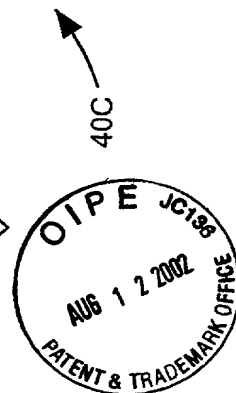
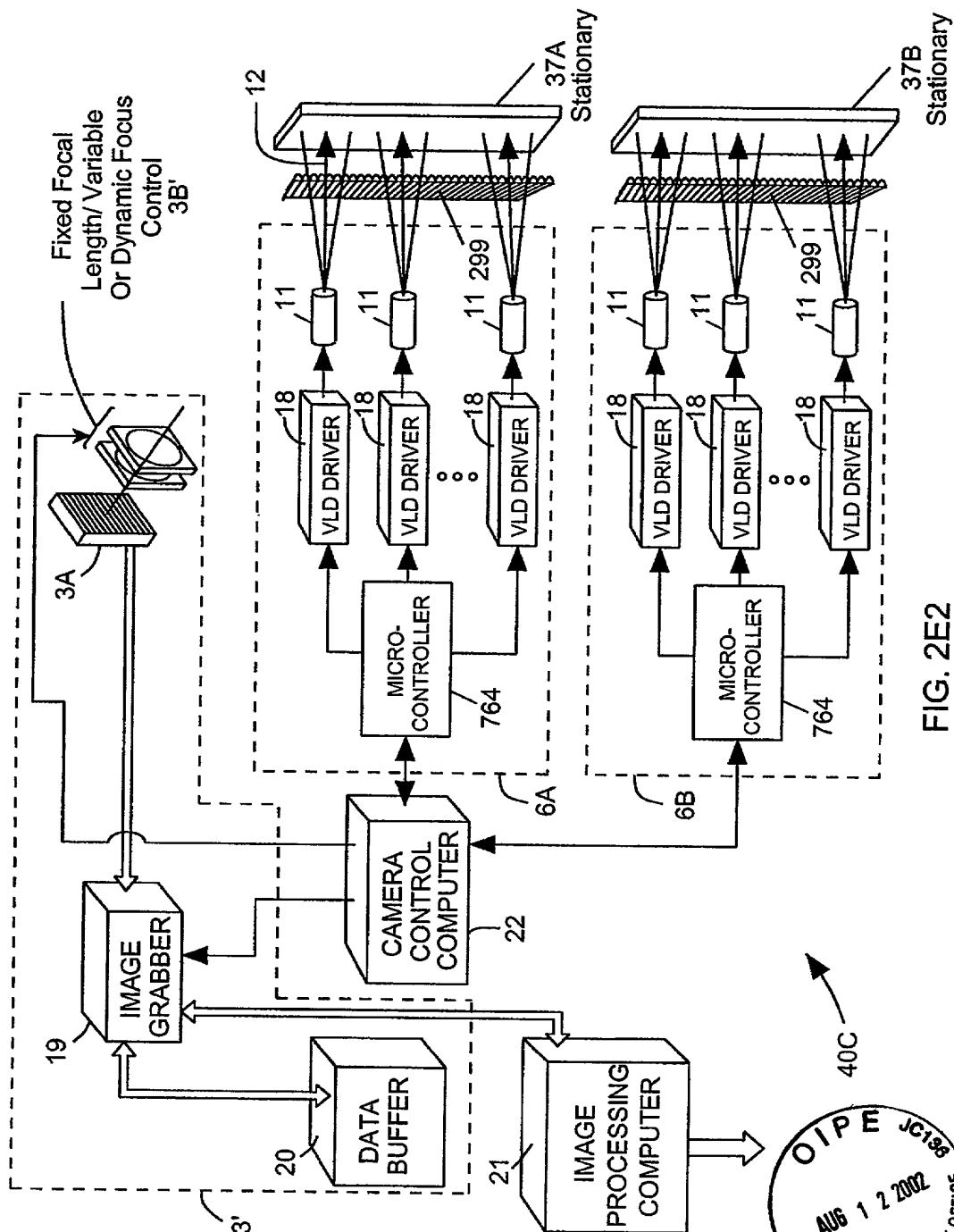


FIG. 2E1





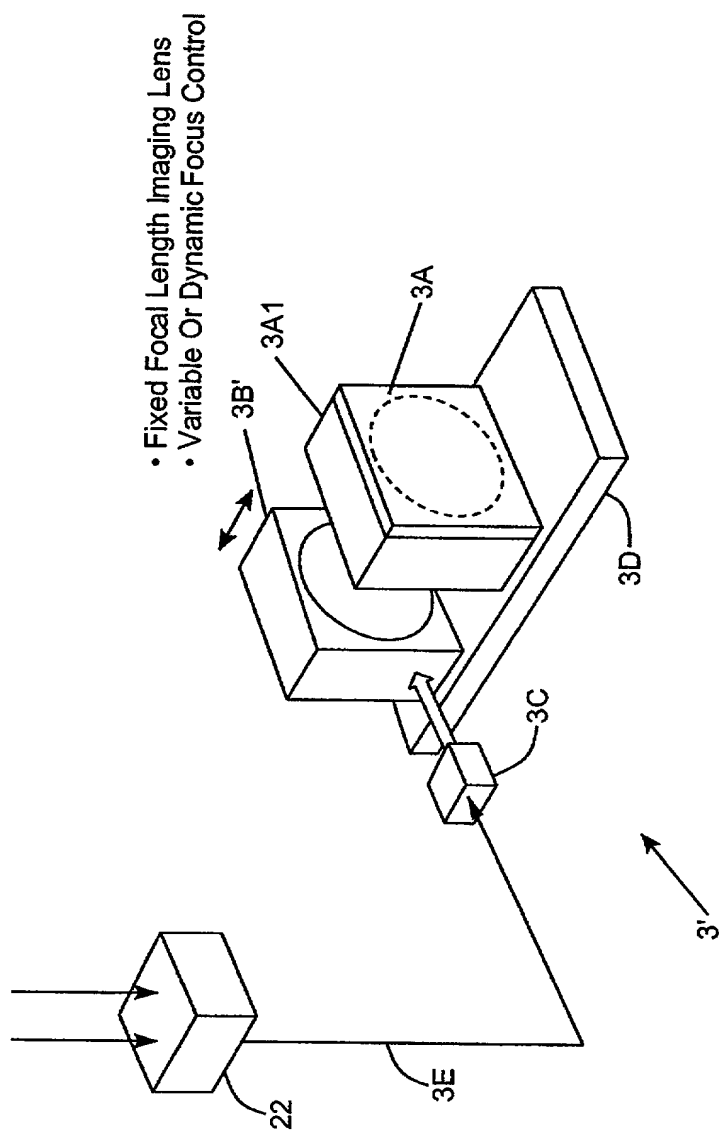
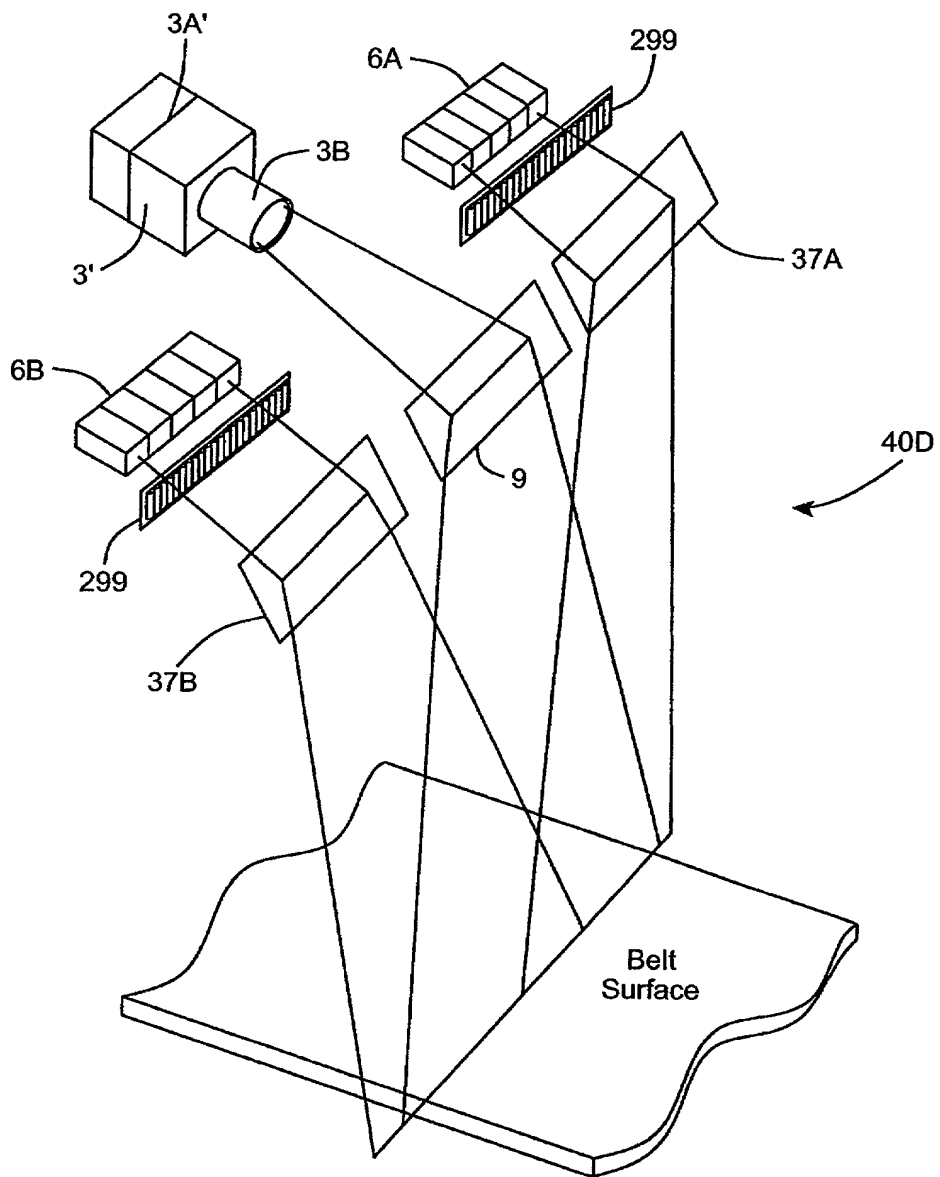


FIG. 2E3



2002140-0001



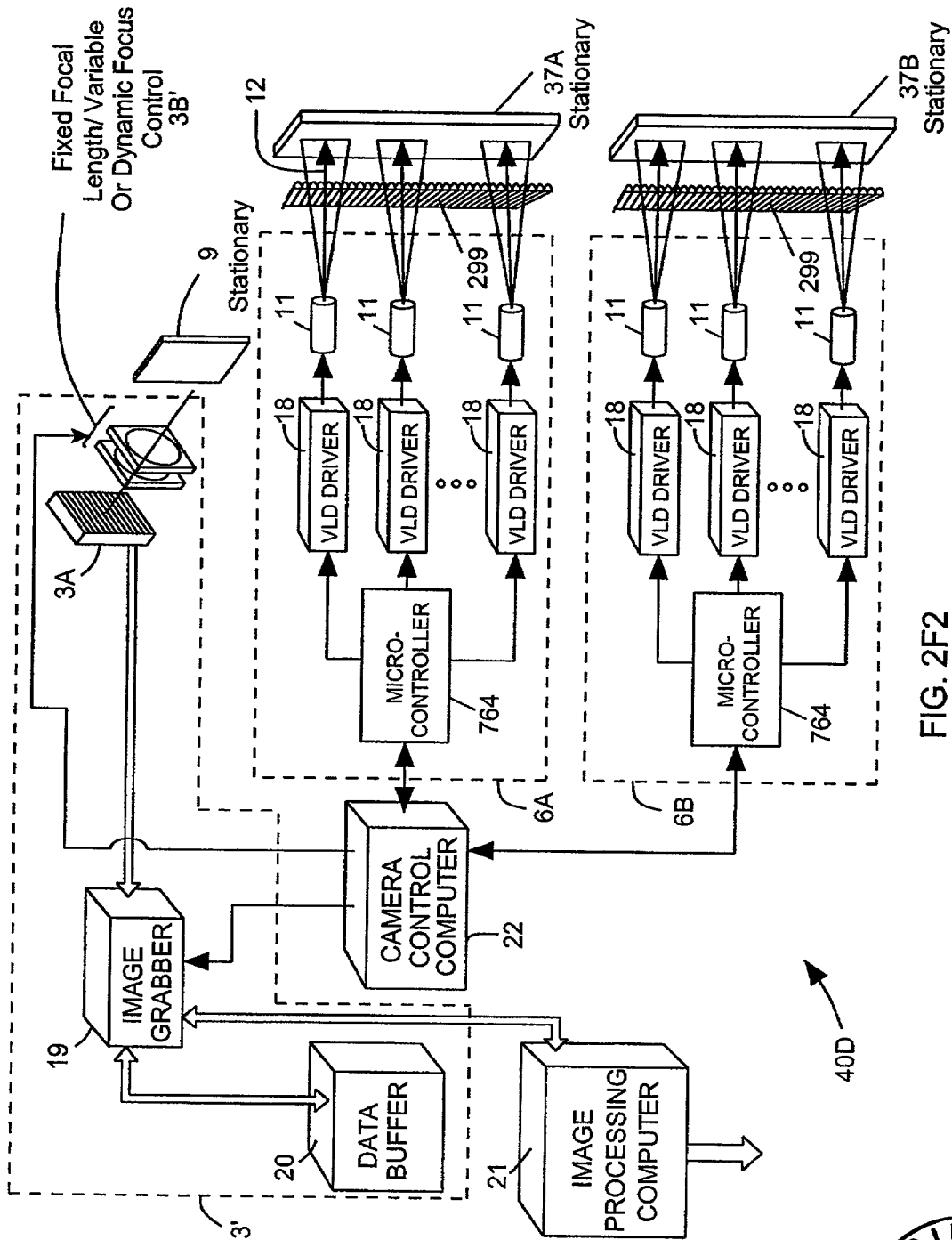


FIG. 2F2



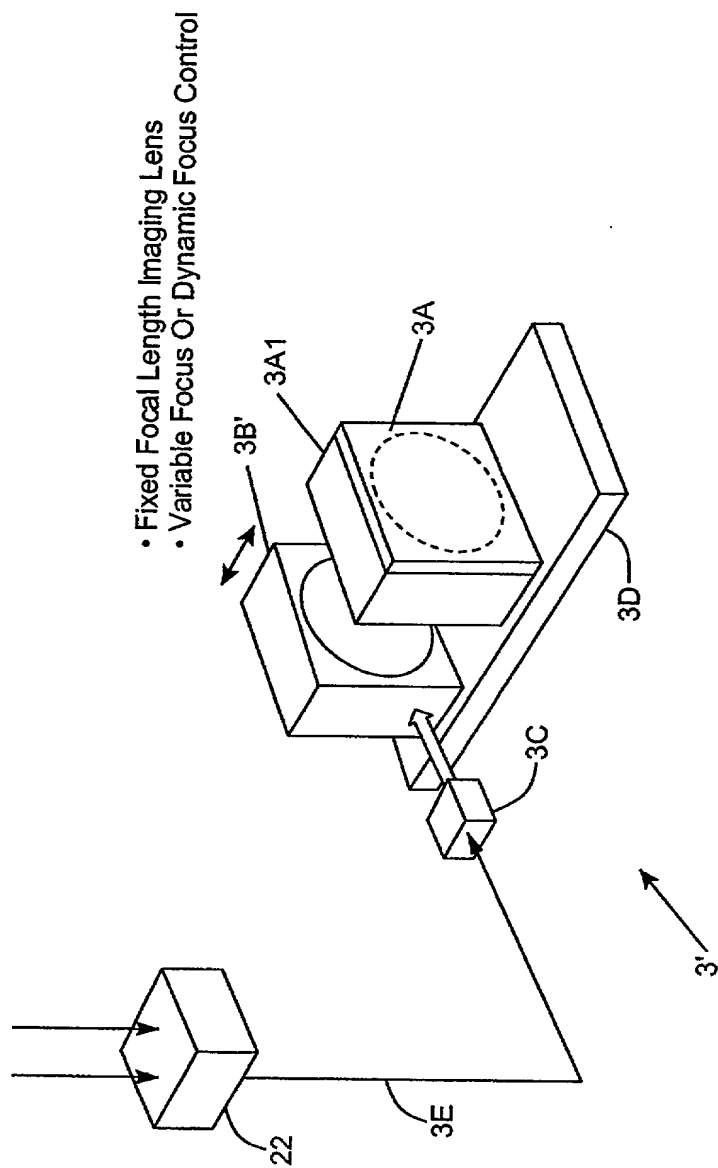


FIG. 2F3



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Top Conveyor Scanner:

- Fixed Focal Length Imaging Lens
- Variable Focal Distance Control

Side Conveyor Scanner:

- Fixed Focal Length Imaging Lens
- Dynamic Focal Distance Control

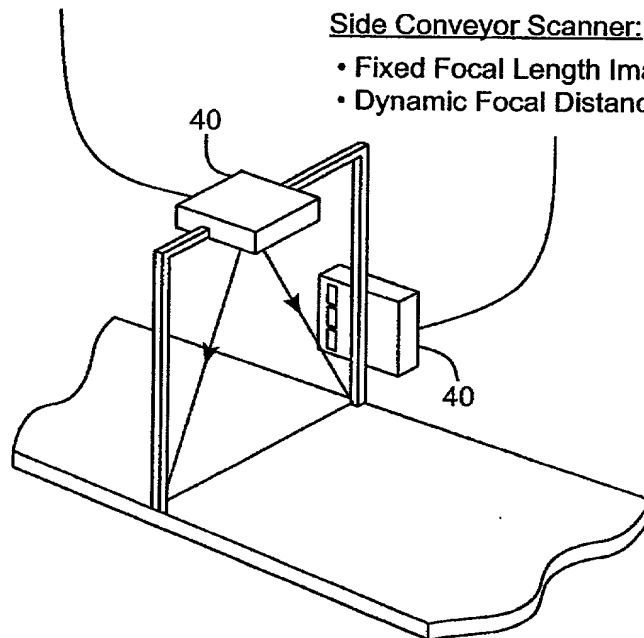


FIG. 2G



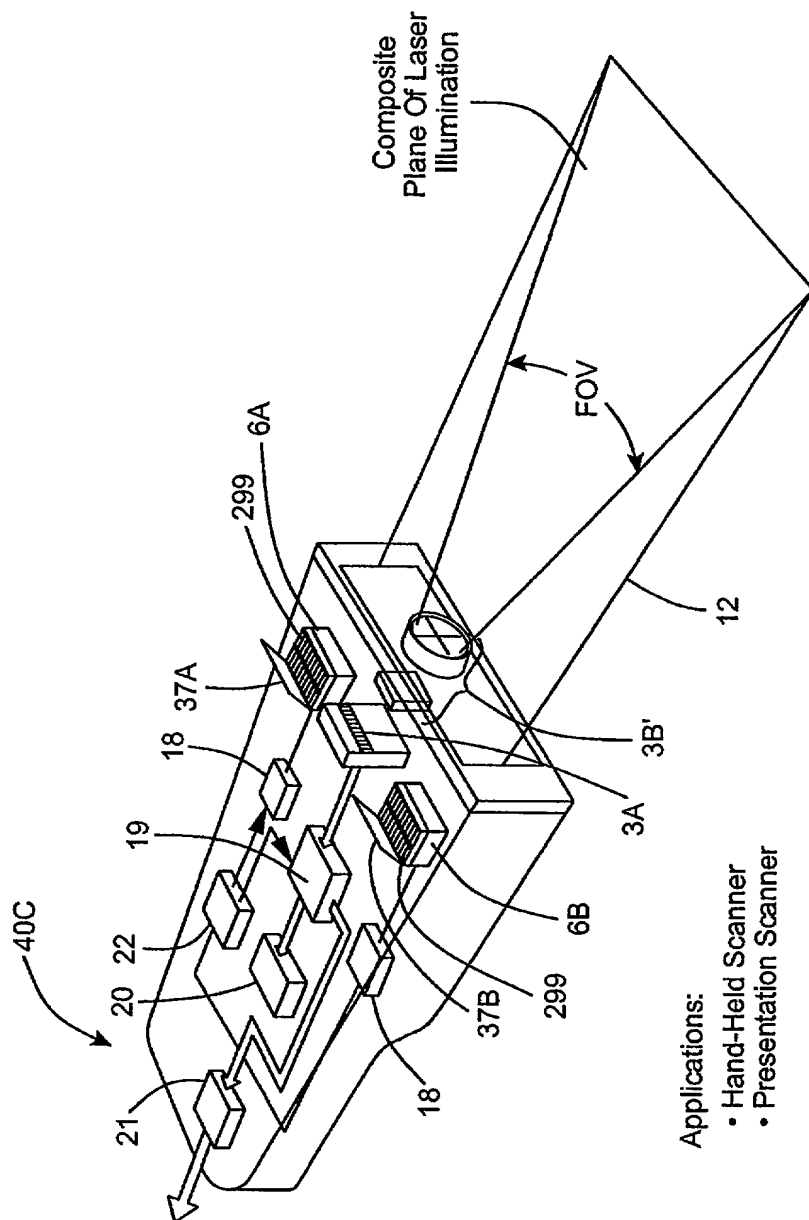


FIG. 2H

Applications:
 • Hand-Held Scanner
 • Presentation Scanner



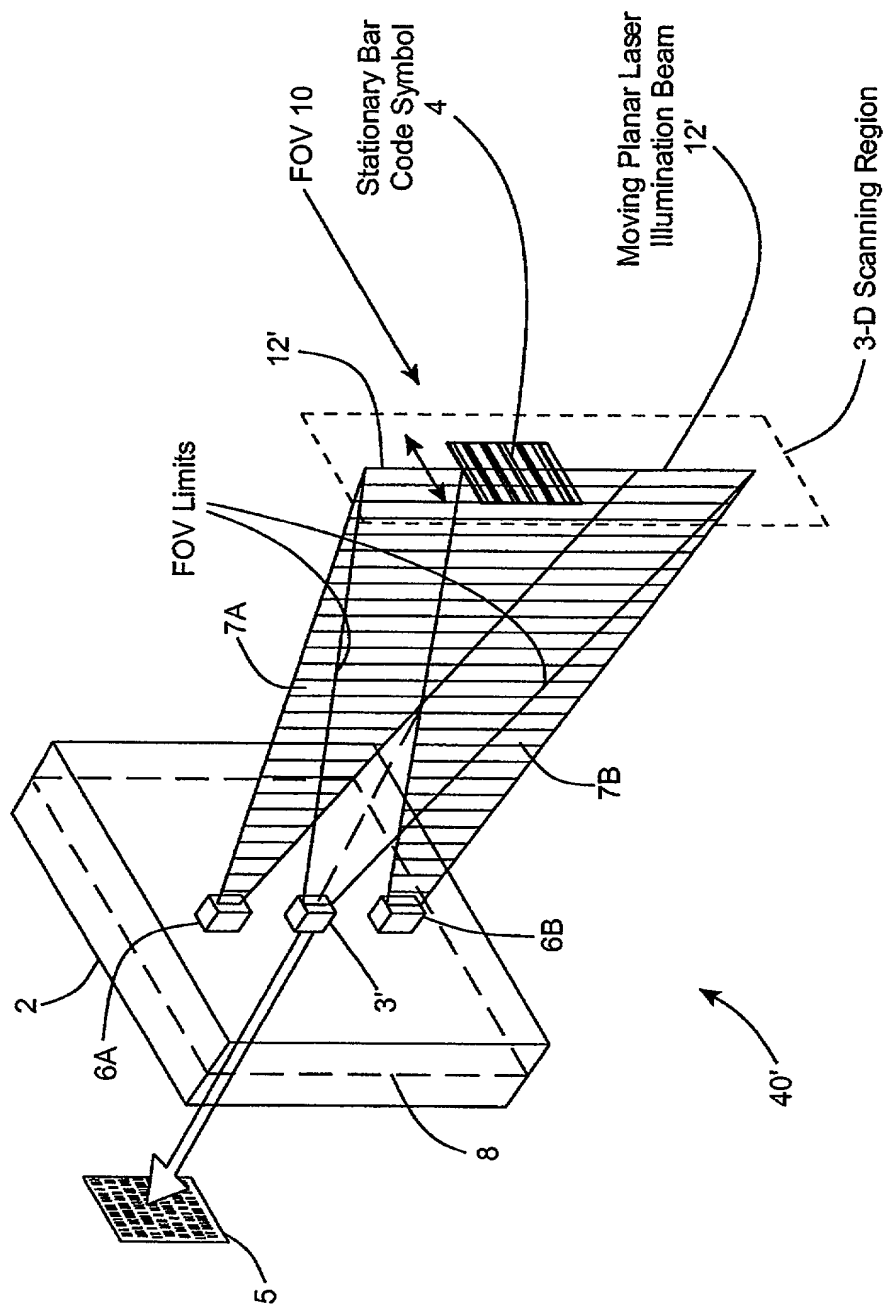
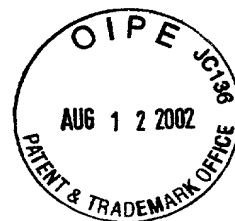


FIG. 211



200204120001

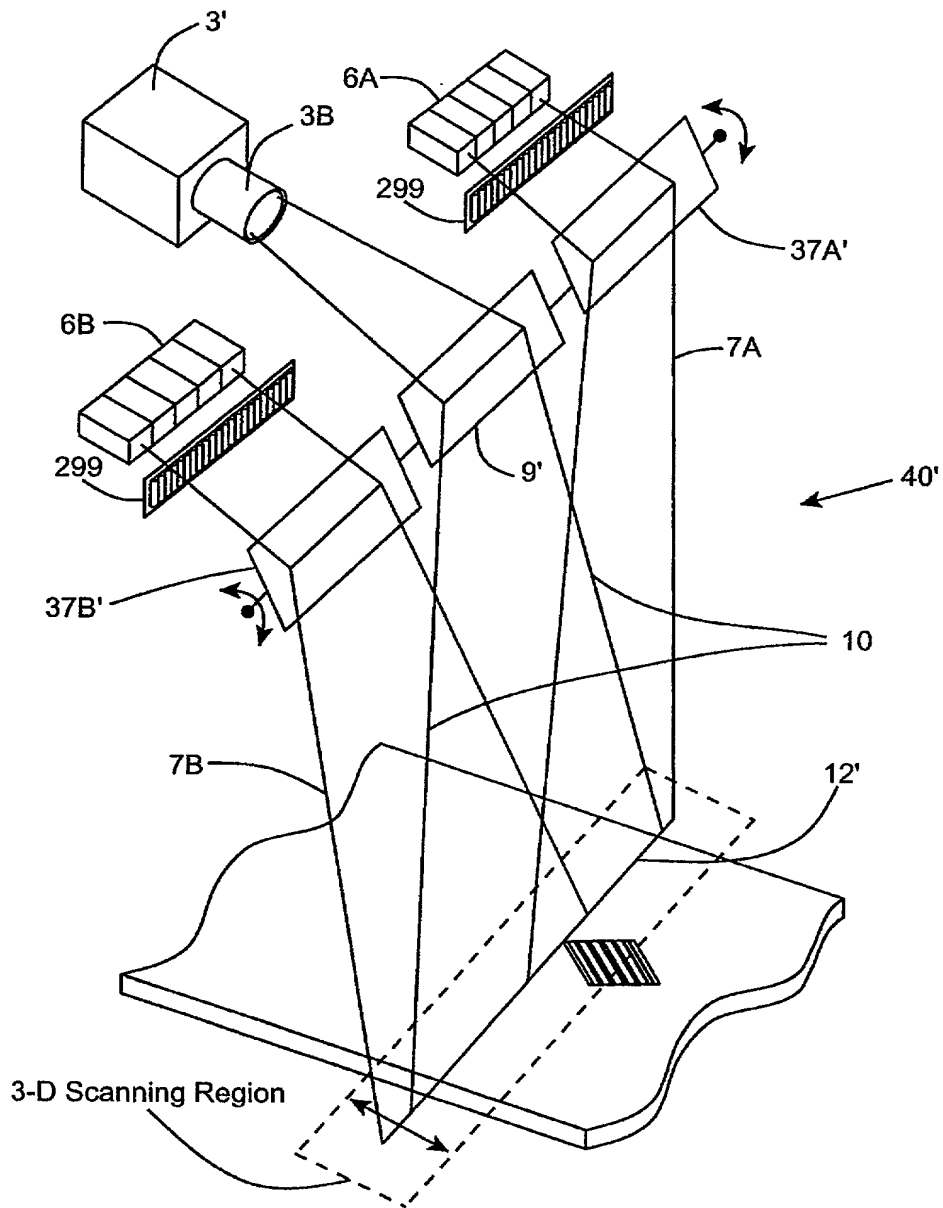


FIG. 212



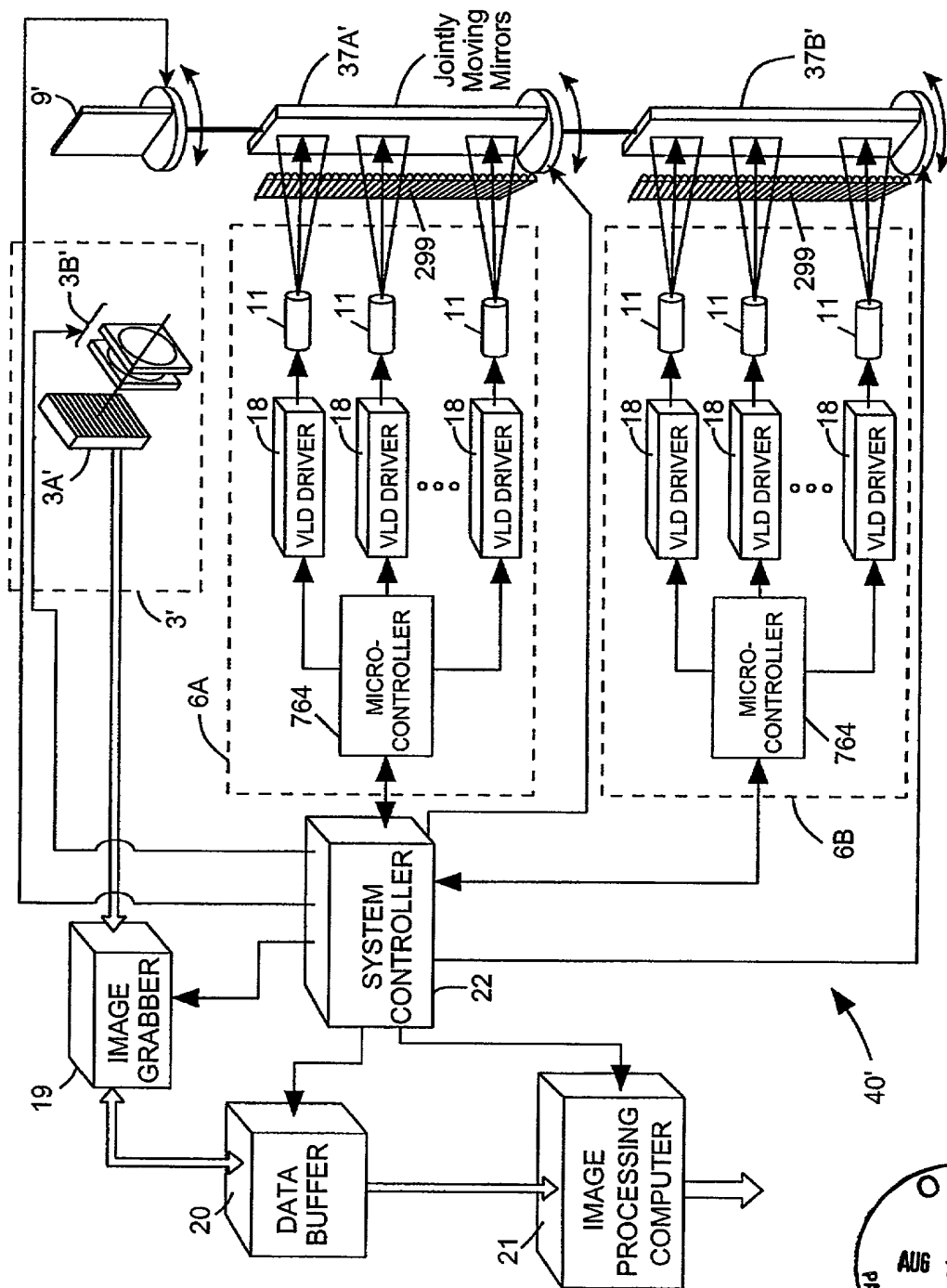


FIG. 213



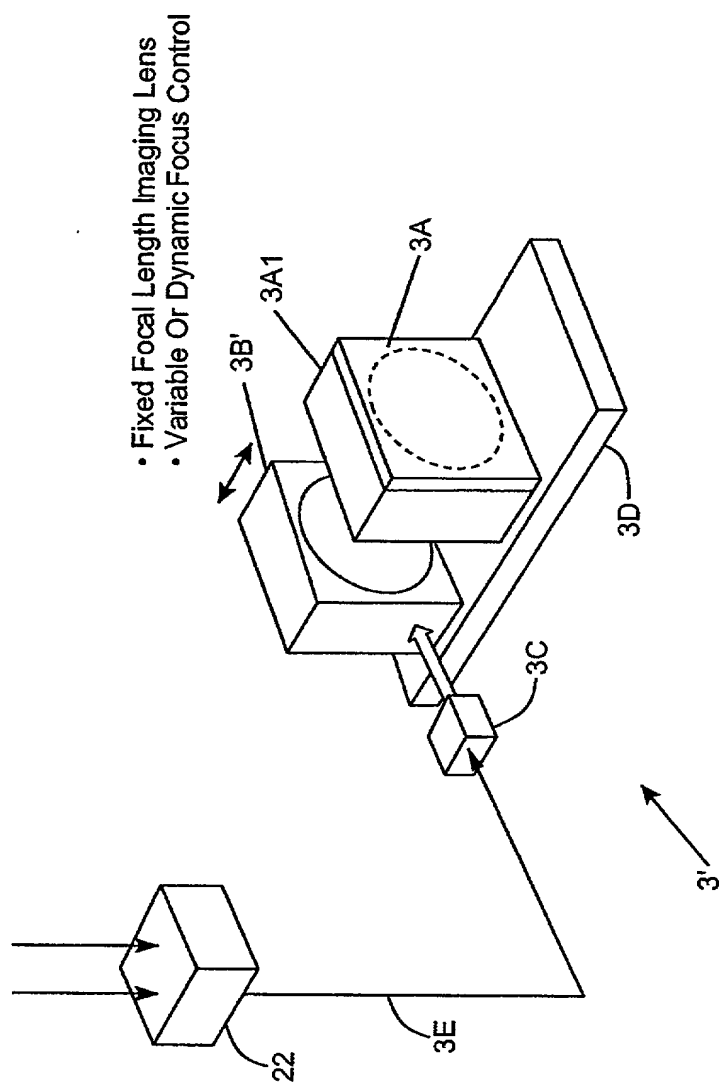


FIG. 214



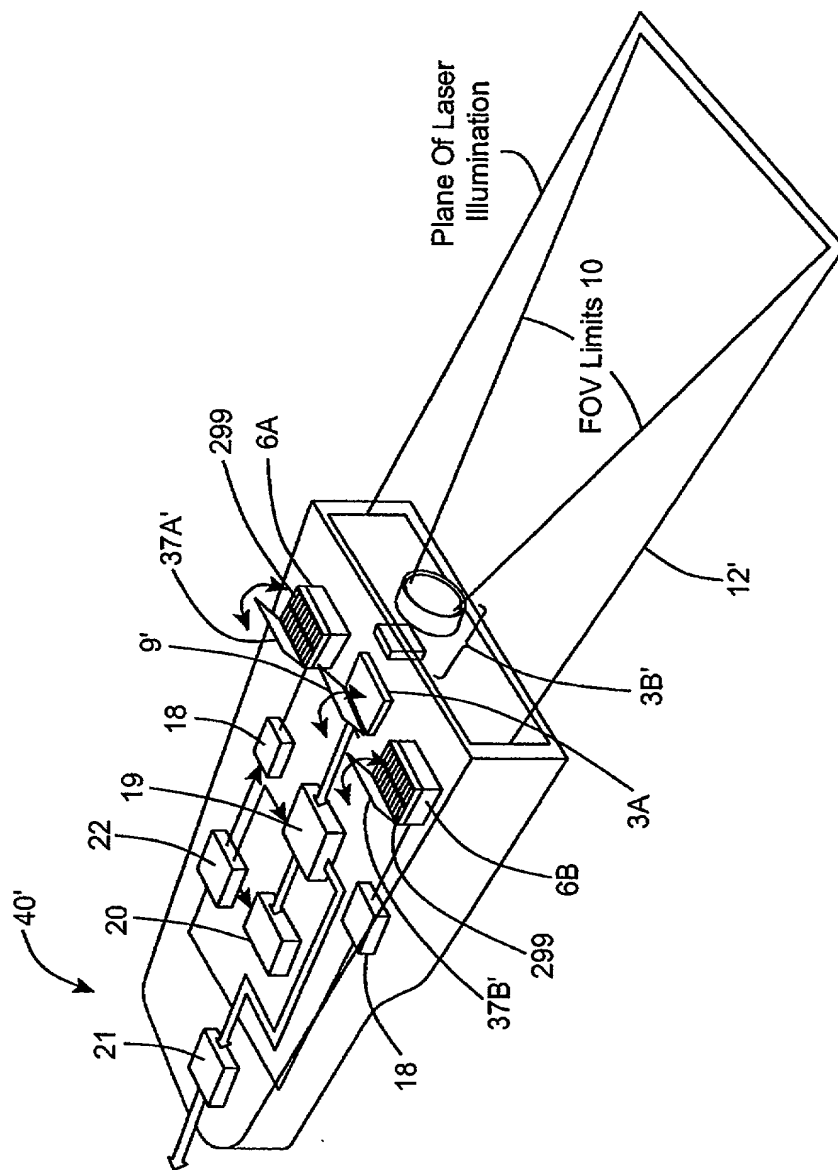


FIG. 215



2002-07-17 10:07:10

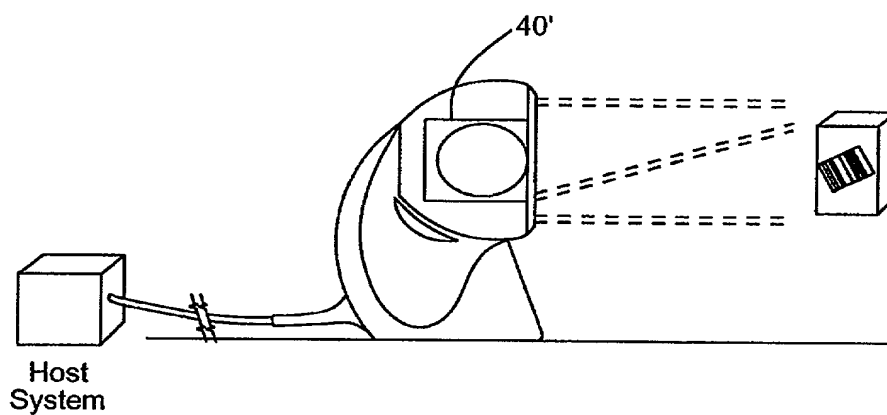


FIG. 216



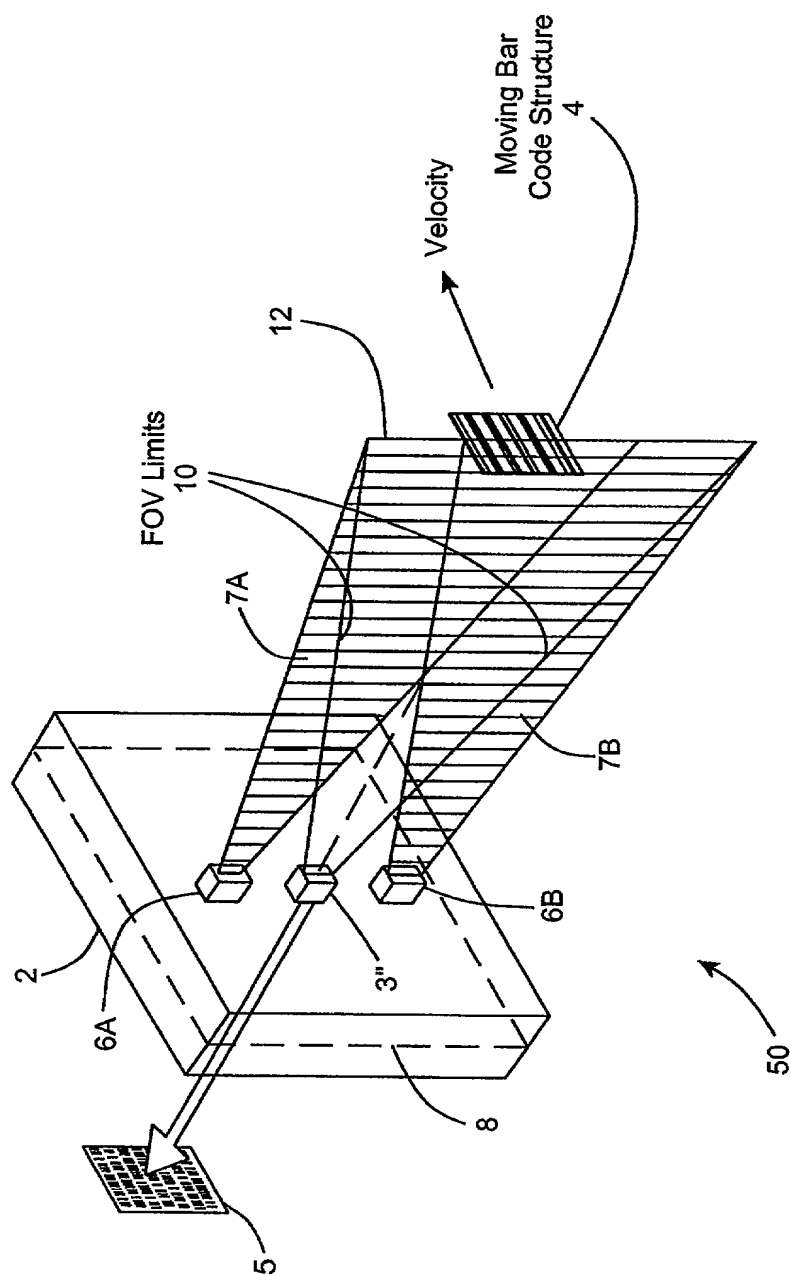


FIG. 3A



20021220 04129001

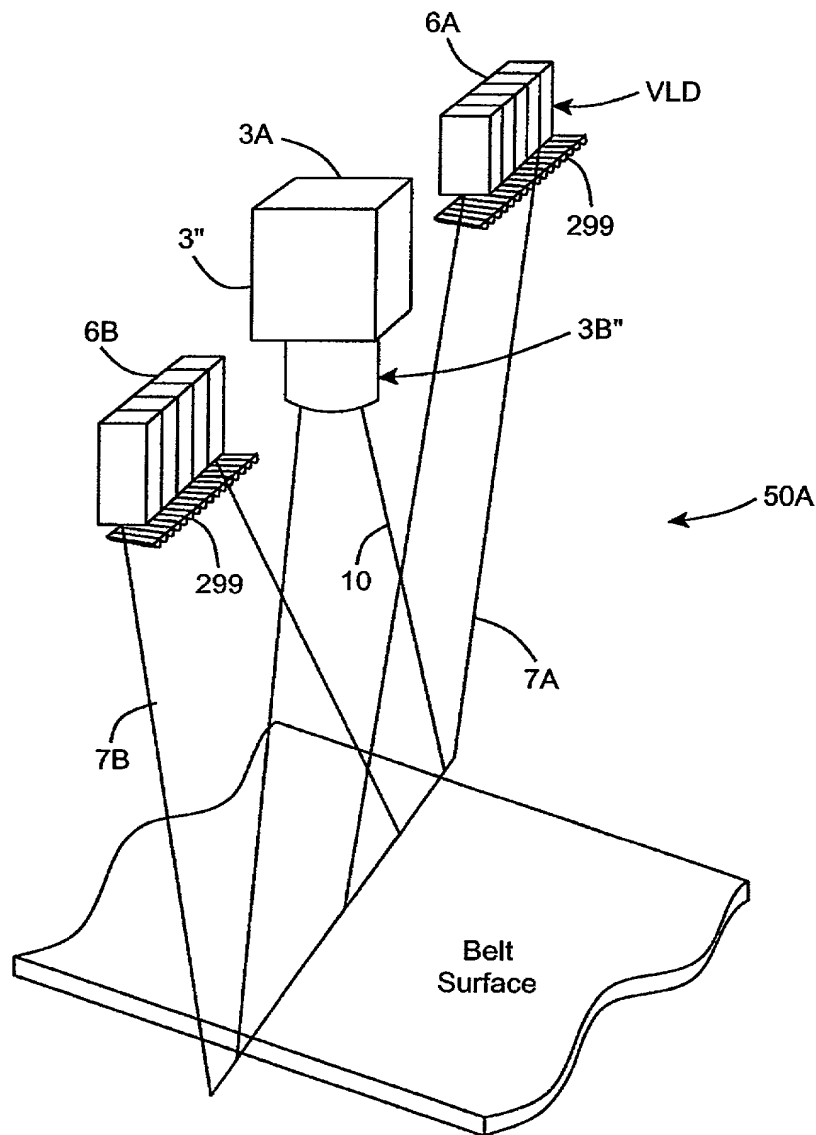


FIG. 3B1



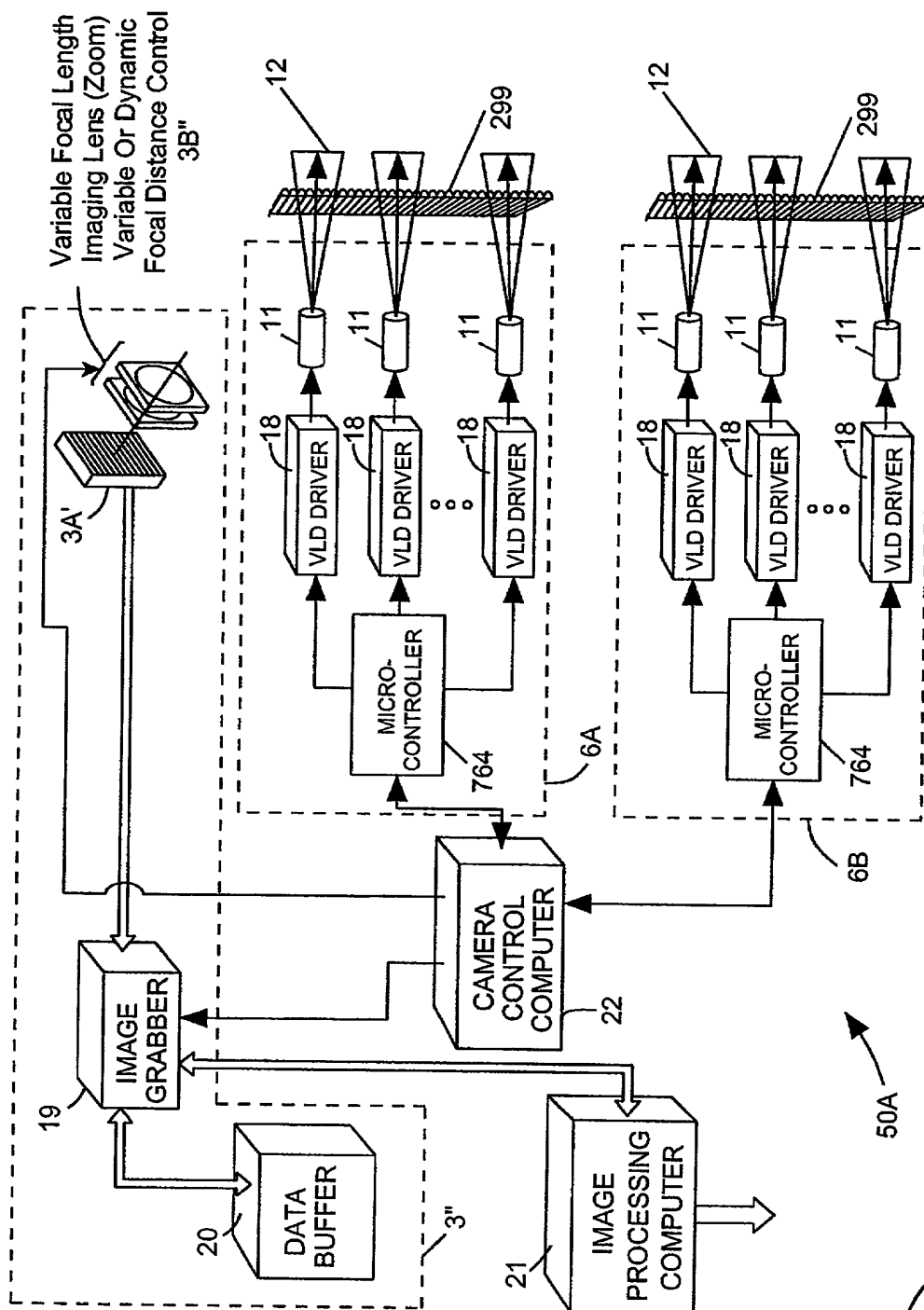


FIG. 3C1



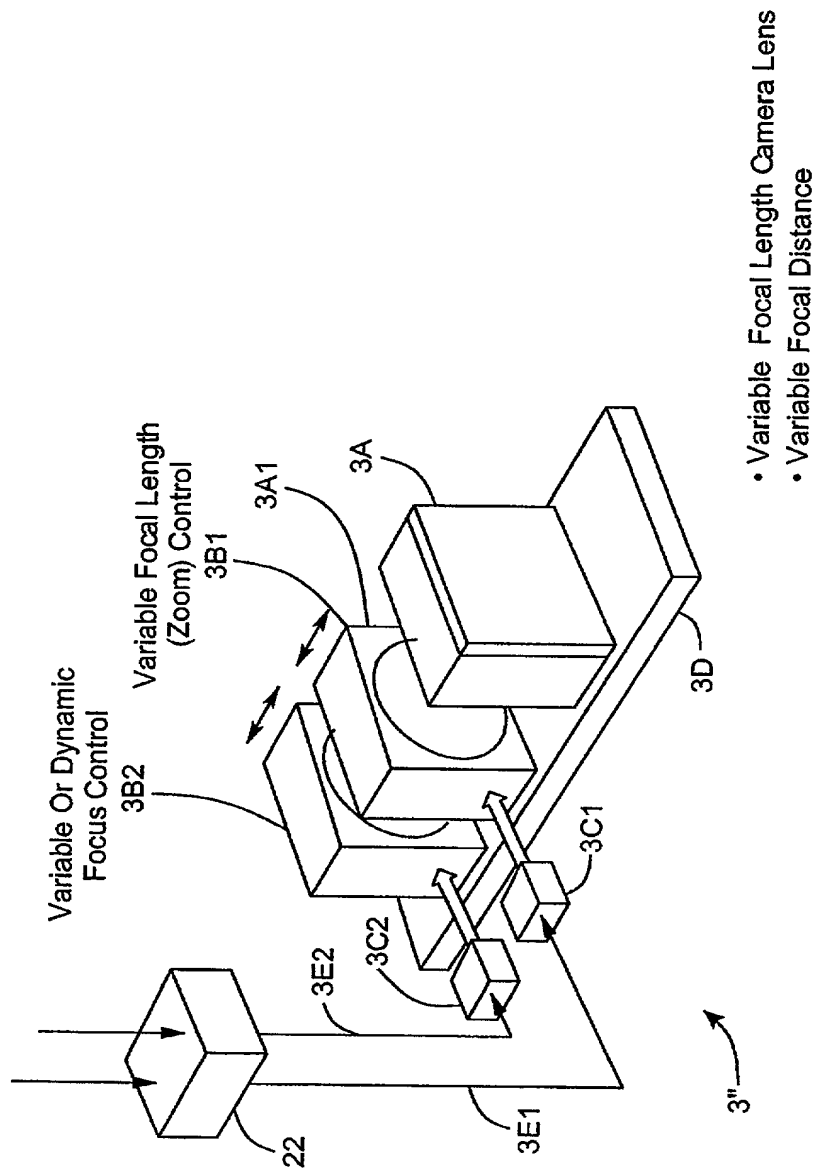


FIG. 3C2



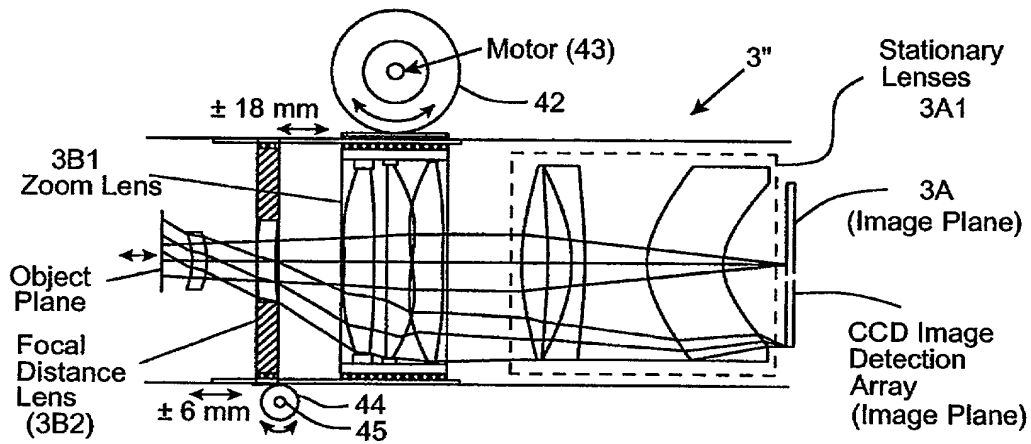


FIG. 3D1

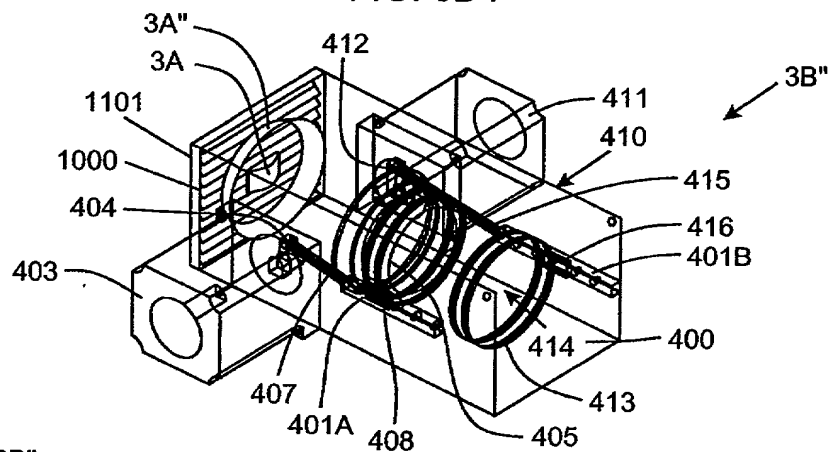


FIG. 3D2

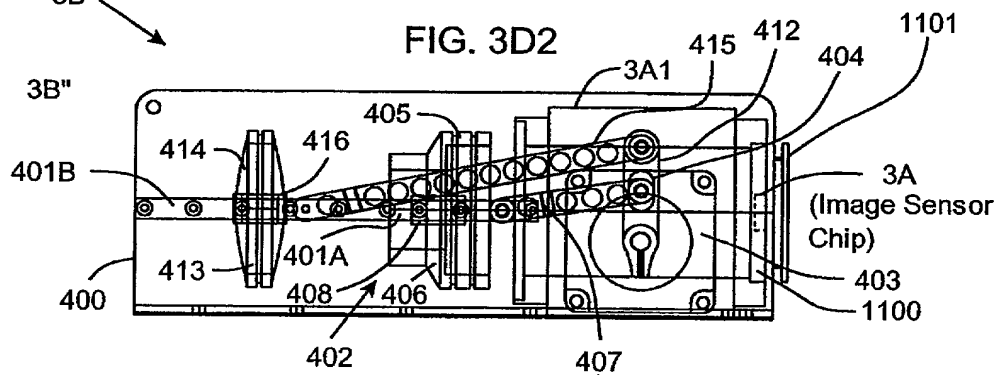


FIG. 3D3



20021220-04129001

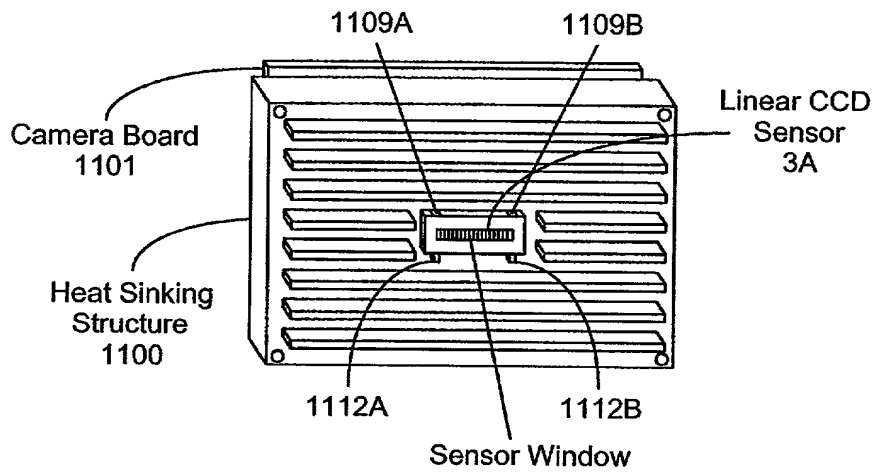


FIG. 3D4

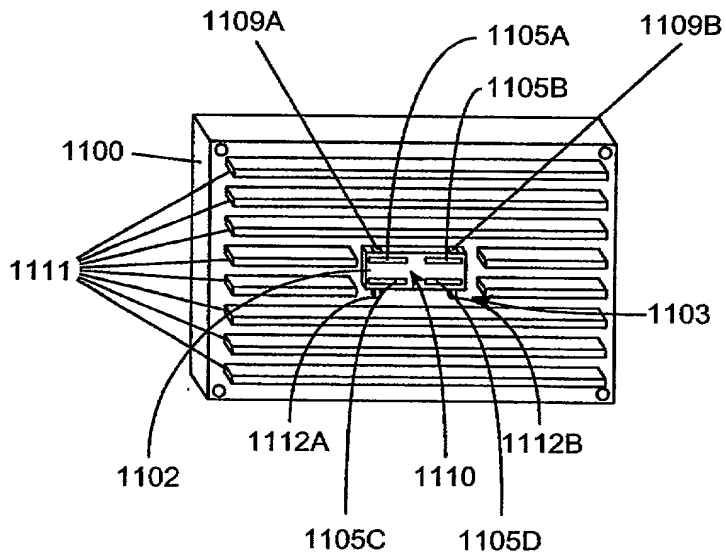


FIG. 3D5



2002140 04T 29001

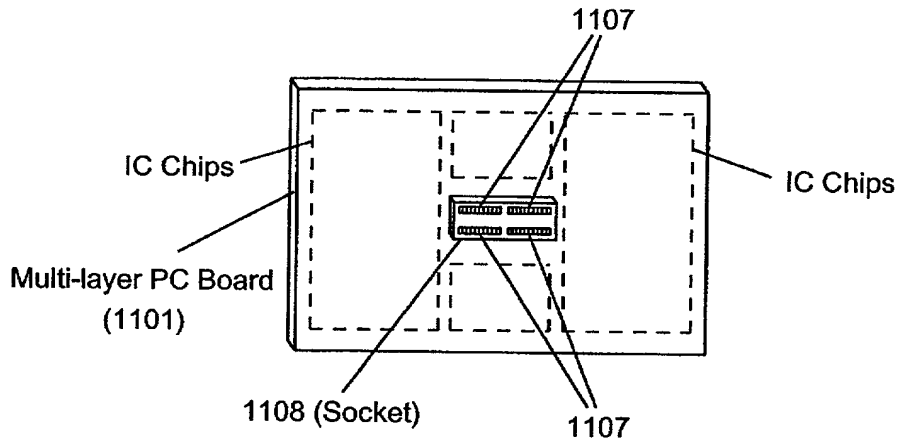


FIG. 3D6

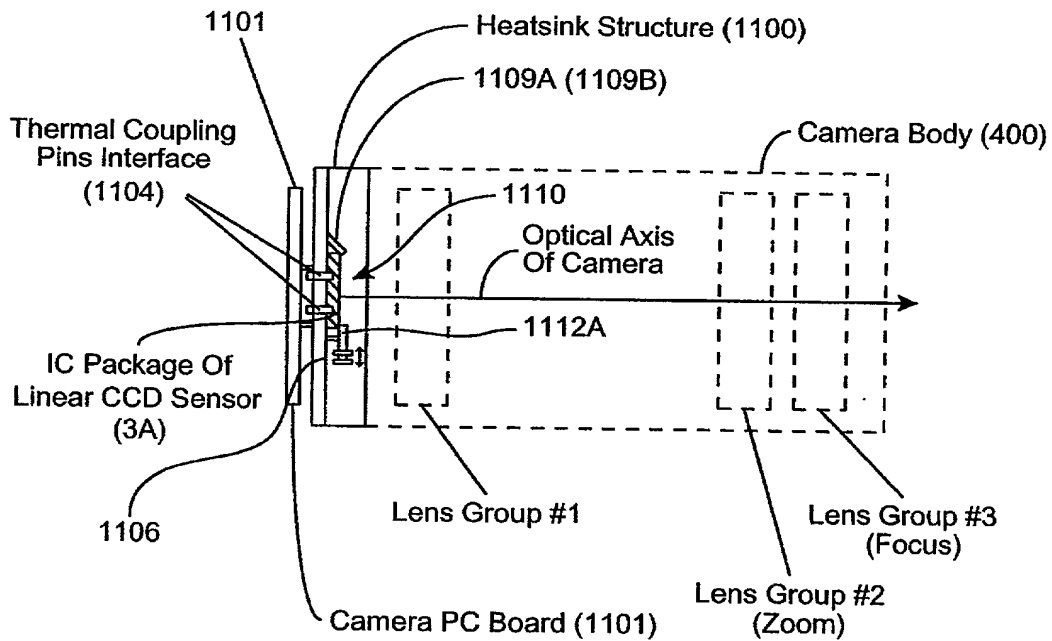


FIG. 3D7



2002/04/24

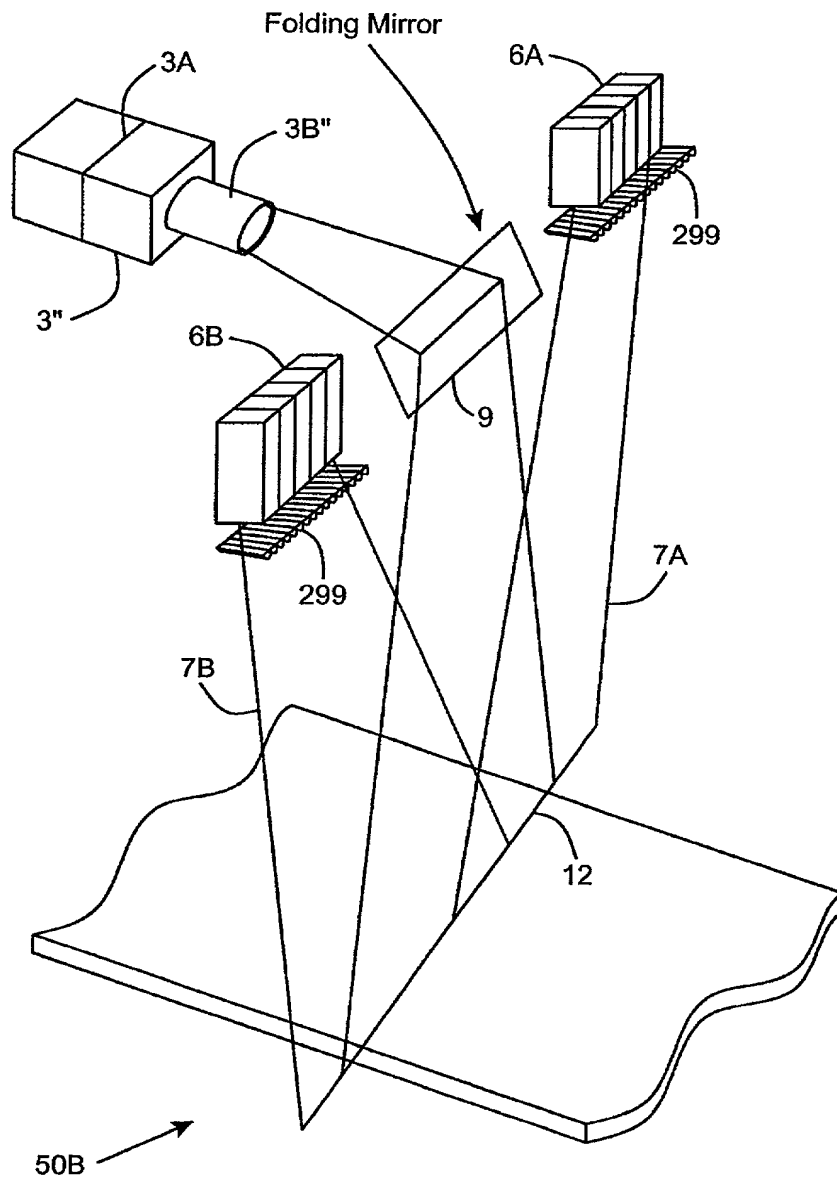
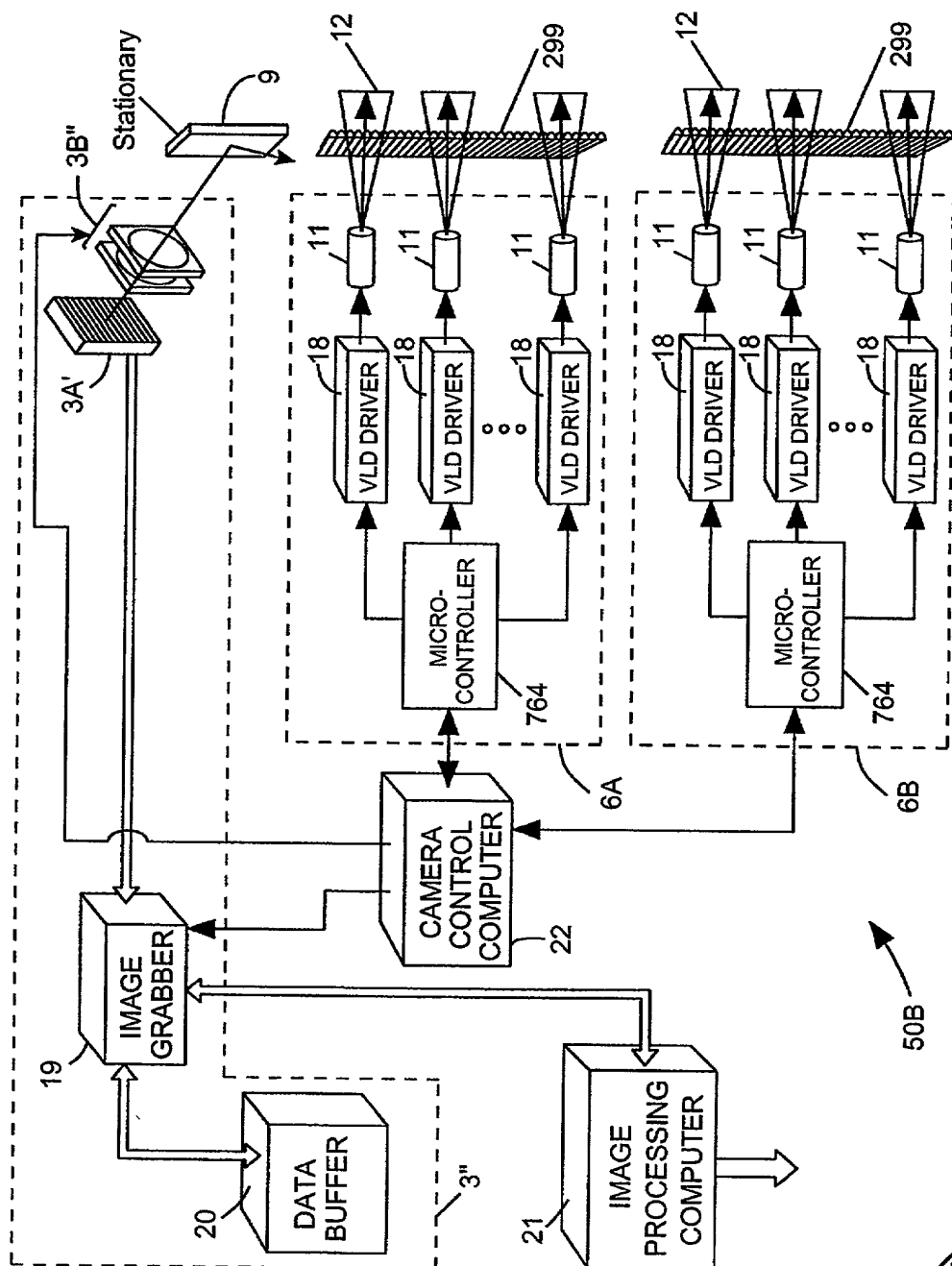


FIG. 3E1





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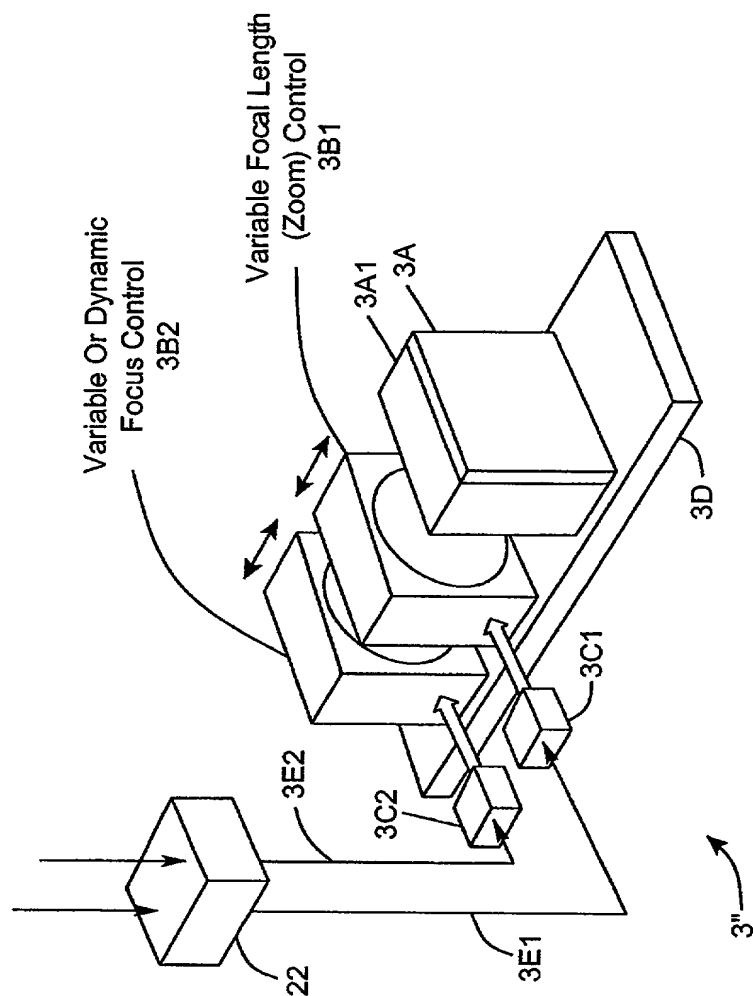


FIG. 3E3



2006140-081202

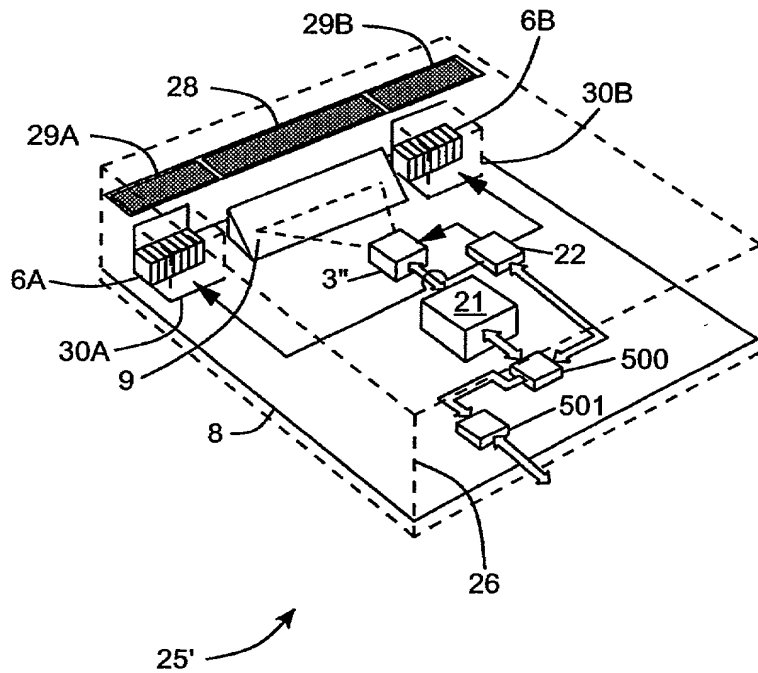
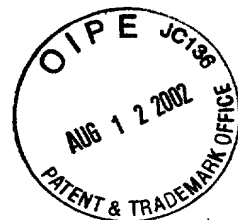


FIG. 3E4



20240001 01125001

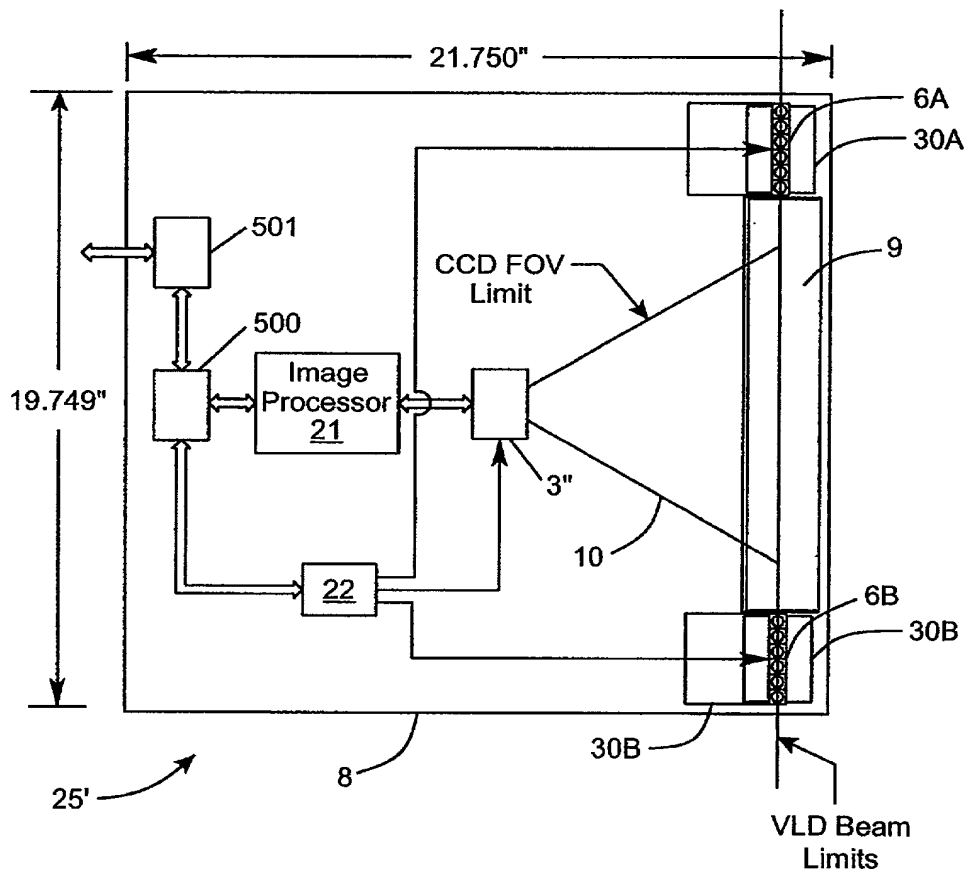


FIG. 3E5



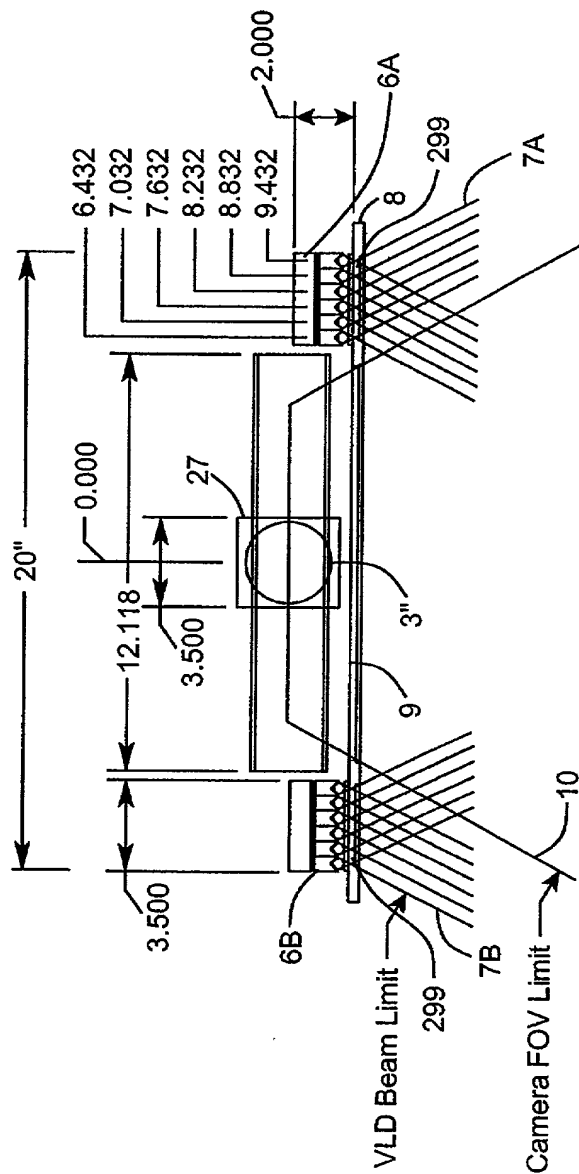


FIG. 3E6



20067440-0012001

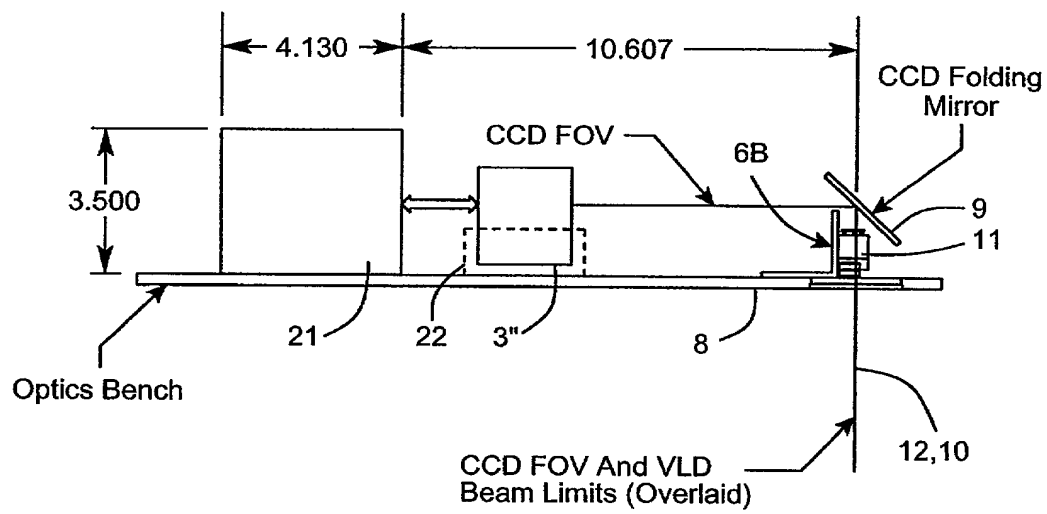


FIG. 3E7



20067440 081001

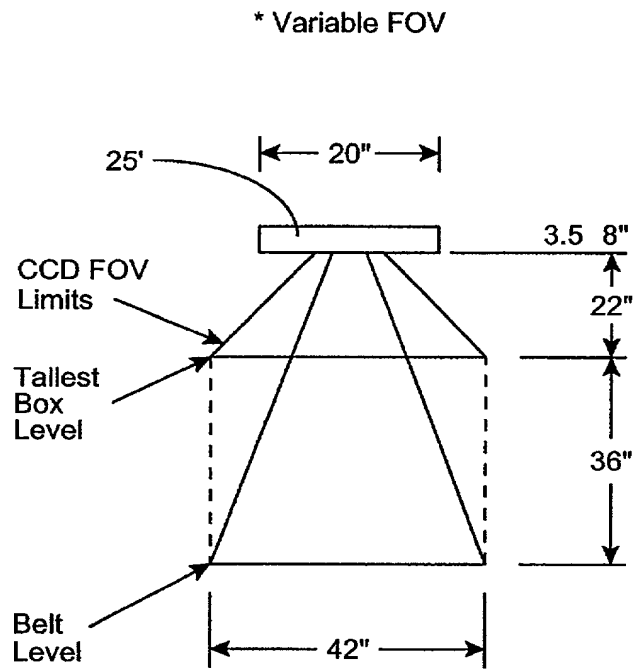
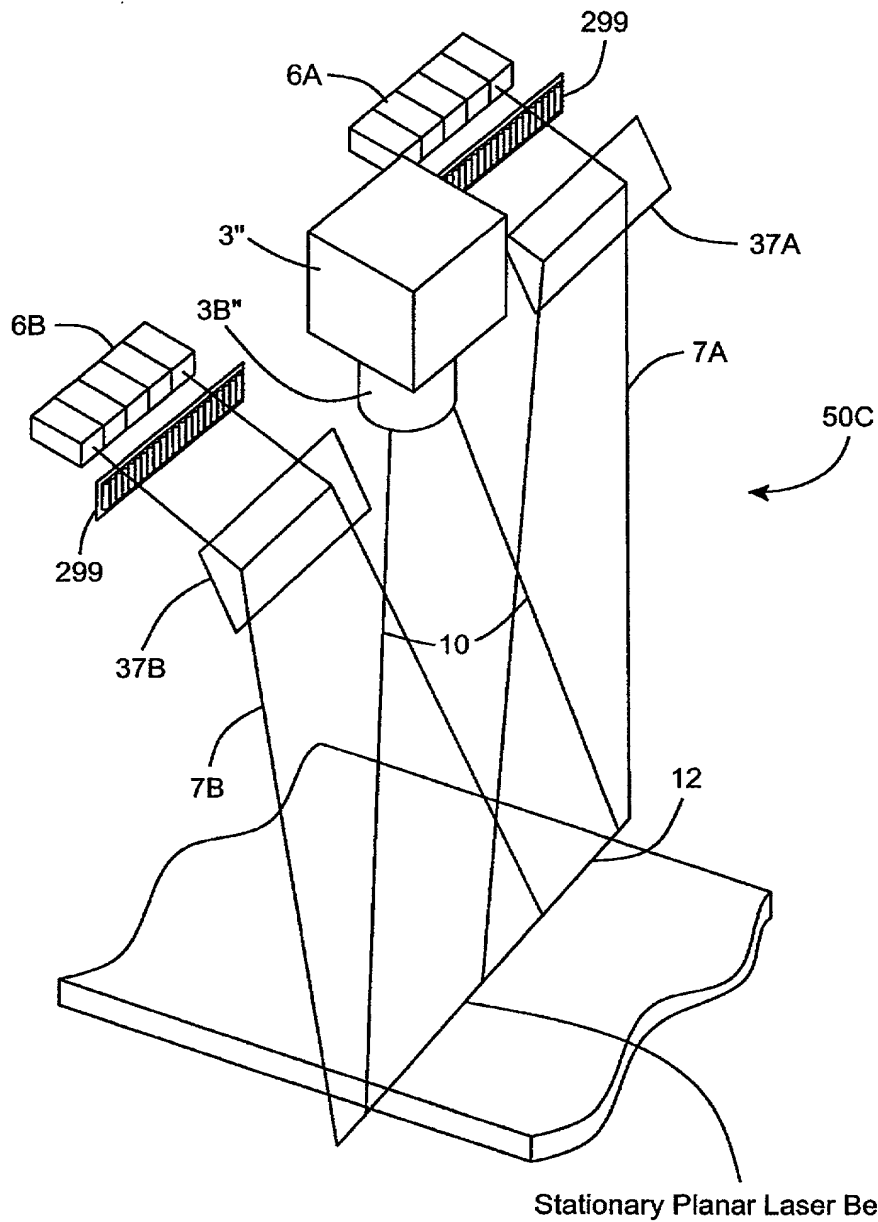


FIG. 3E8



2002140-081202

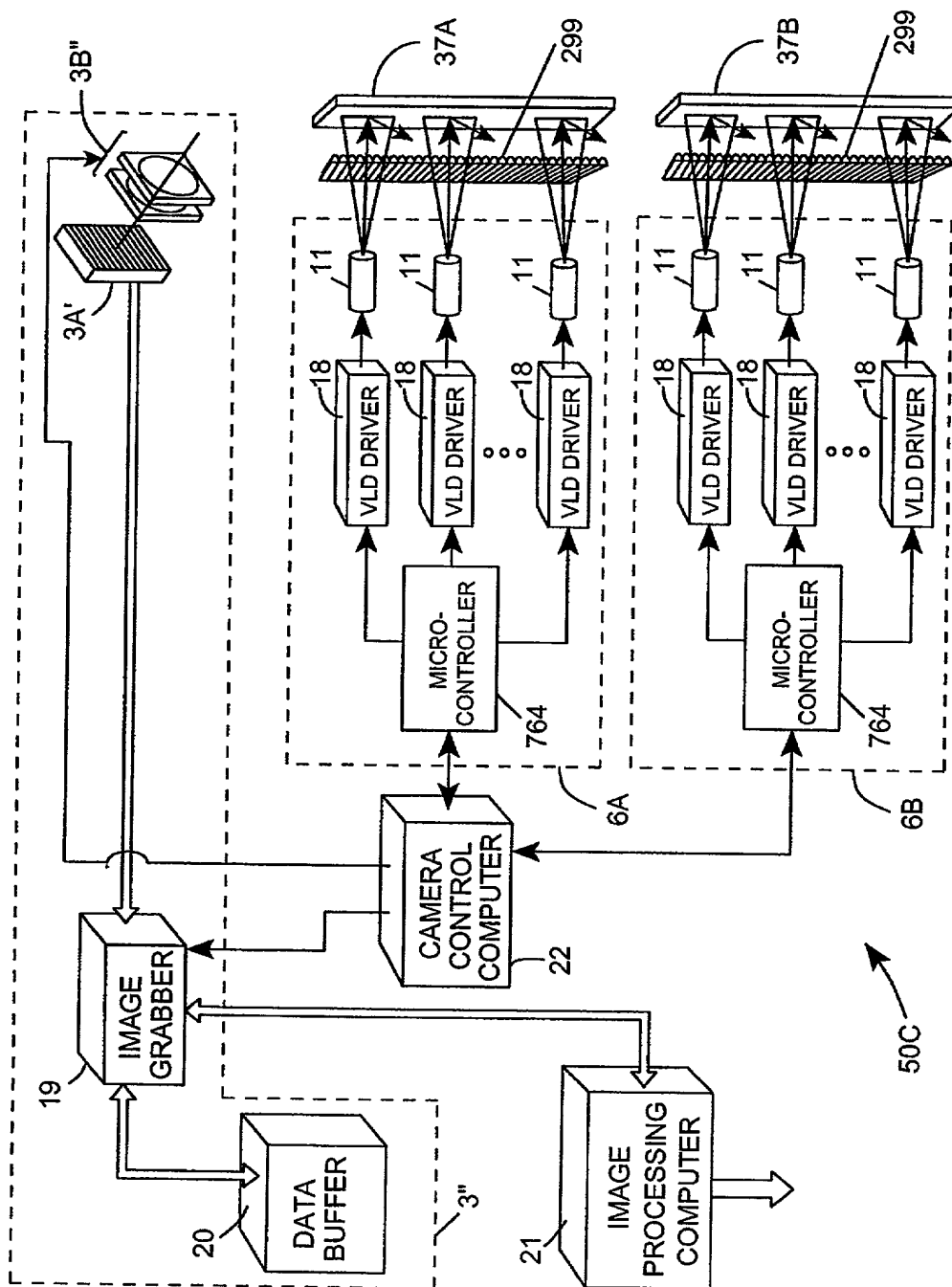


Stationary Planar Laser Beam

FIG. 3F1



A circular stamp from the OIPE Patent & Trademark Office. The text "OIPE" is at the top, "JCI88" is at the top right, "AUG 12 2002" is in the center, and "PATENT & TRADEMARK OFFICE" is at the bottom.



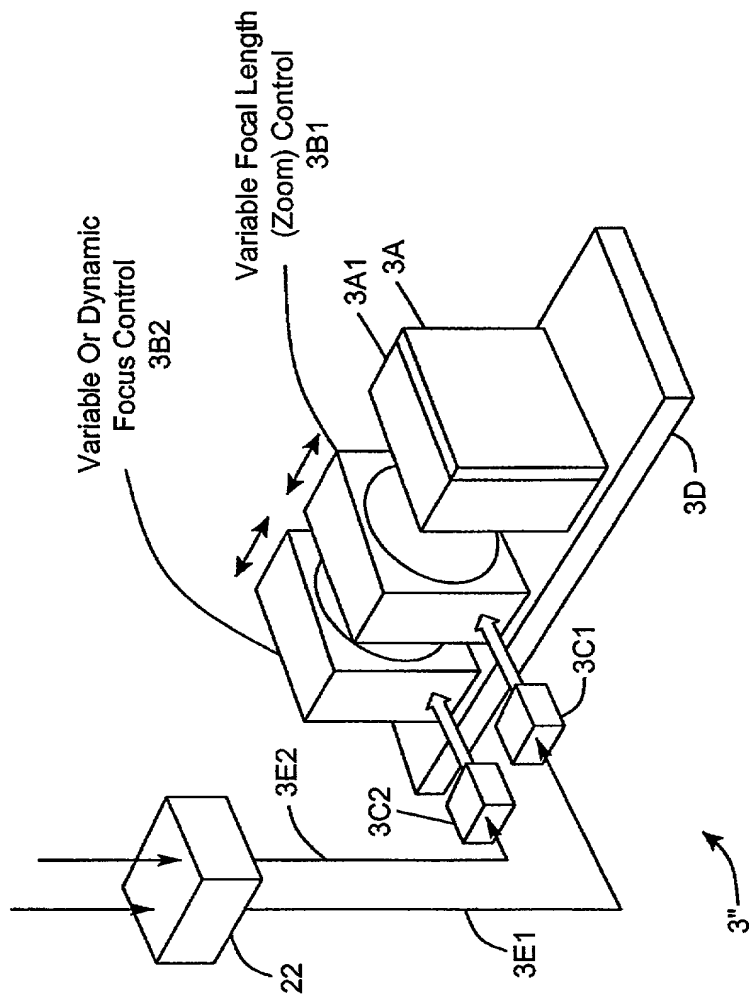


FIG. 3F3



2002140 08129001

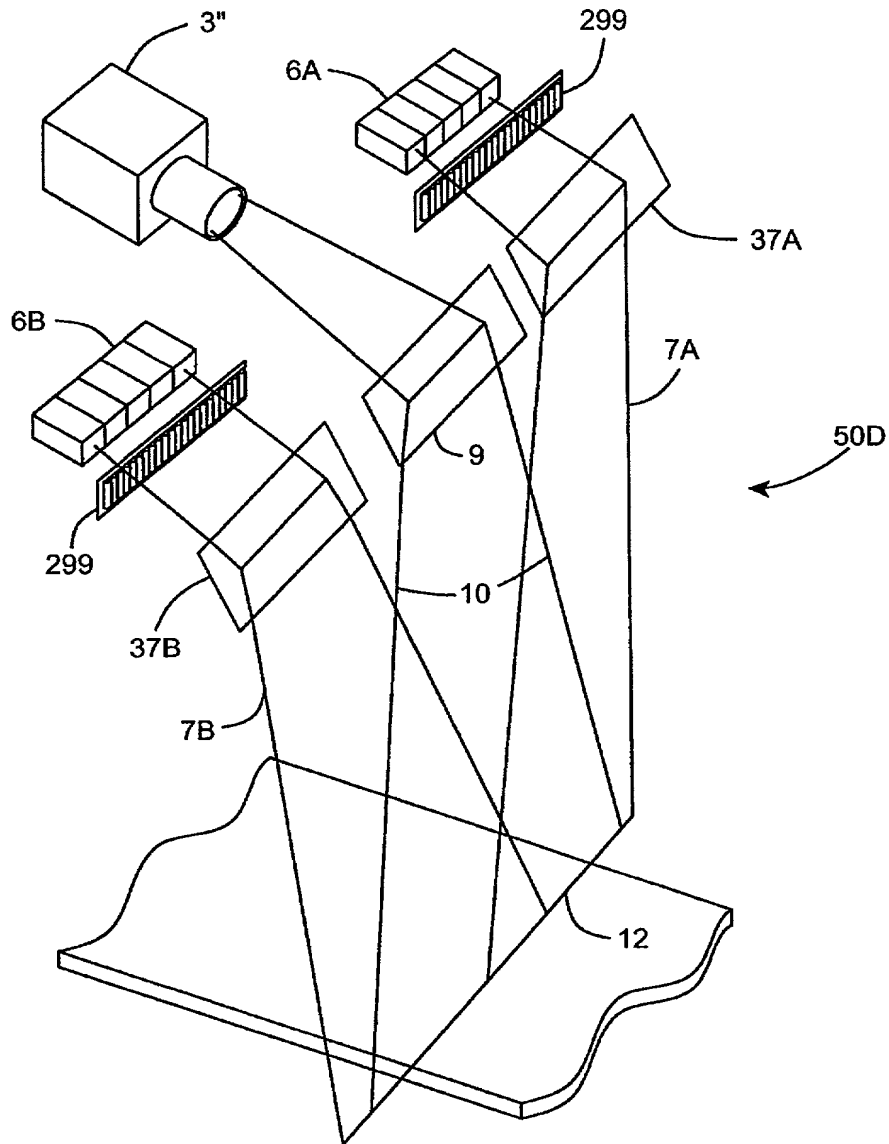


FIG. 3G1



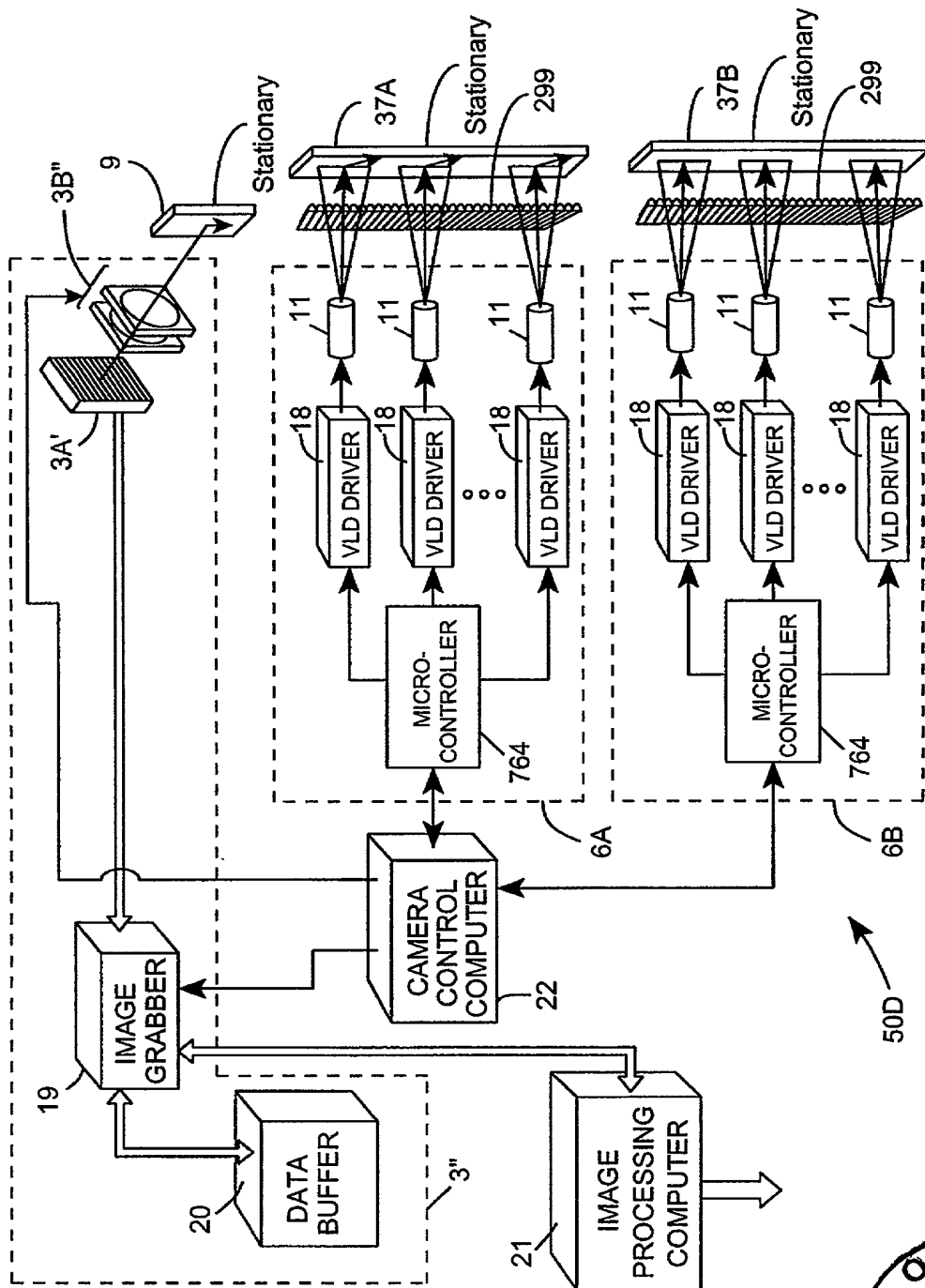
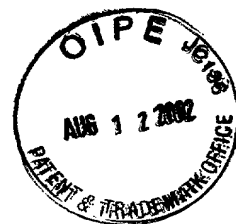


FIG. 3G2



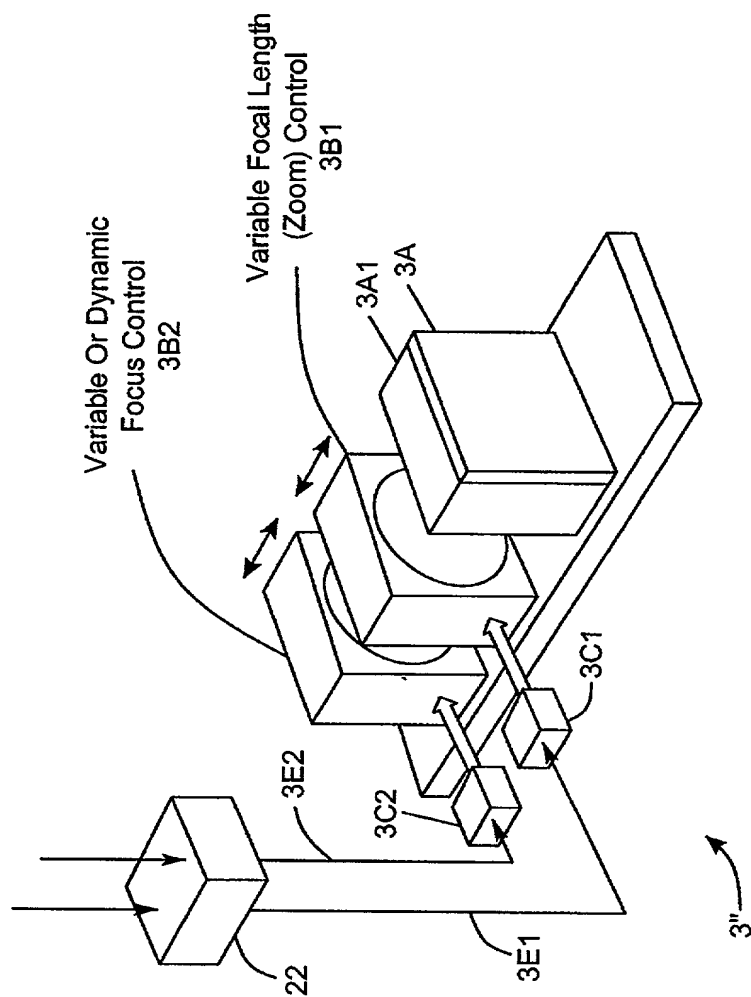


FIG. 3G3



202130-017-9001

- Variable Focal Length Imaging Lens
- Variable Focal Distance

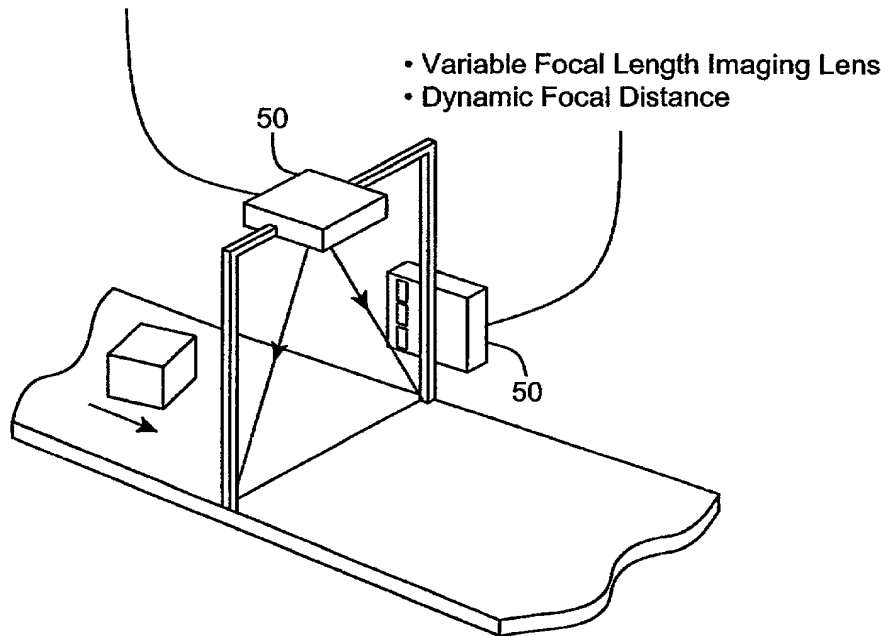


FIG. 3H



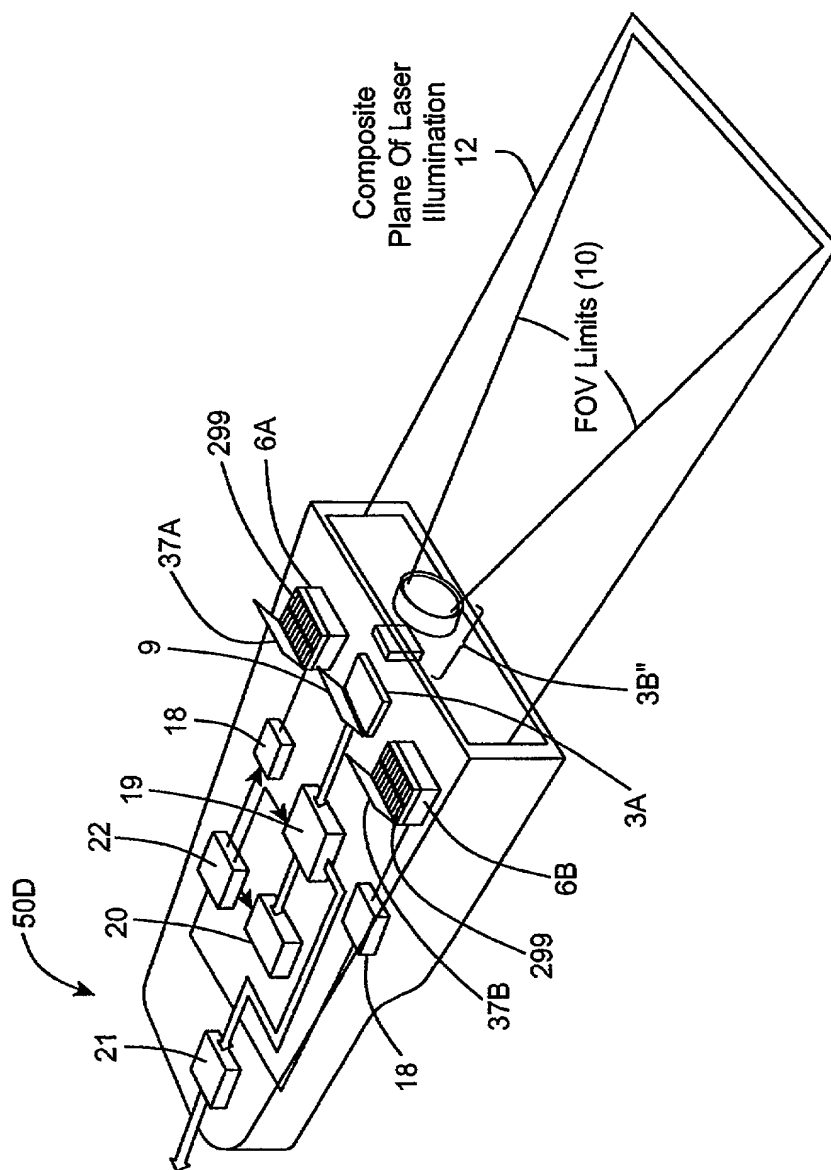


FIG. 3I



202180 04129001

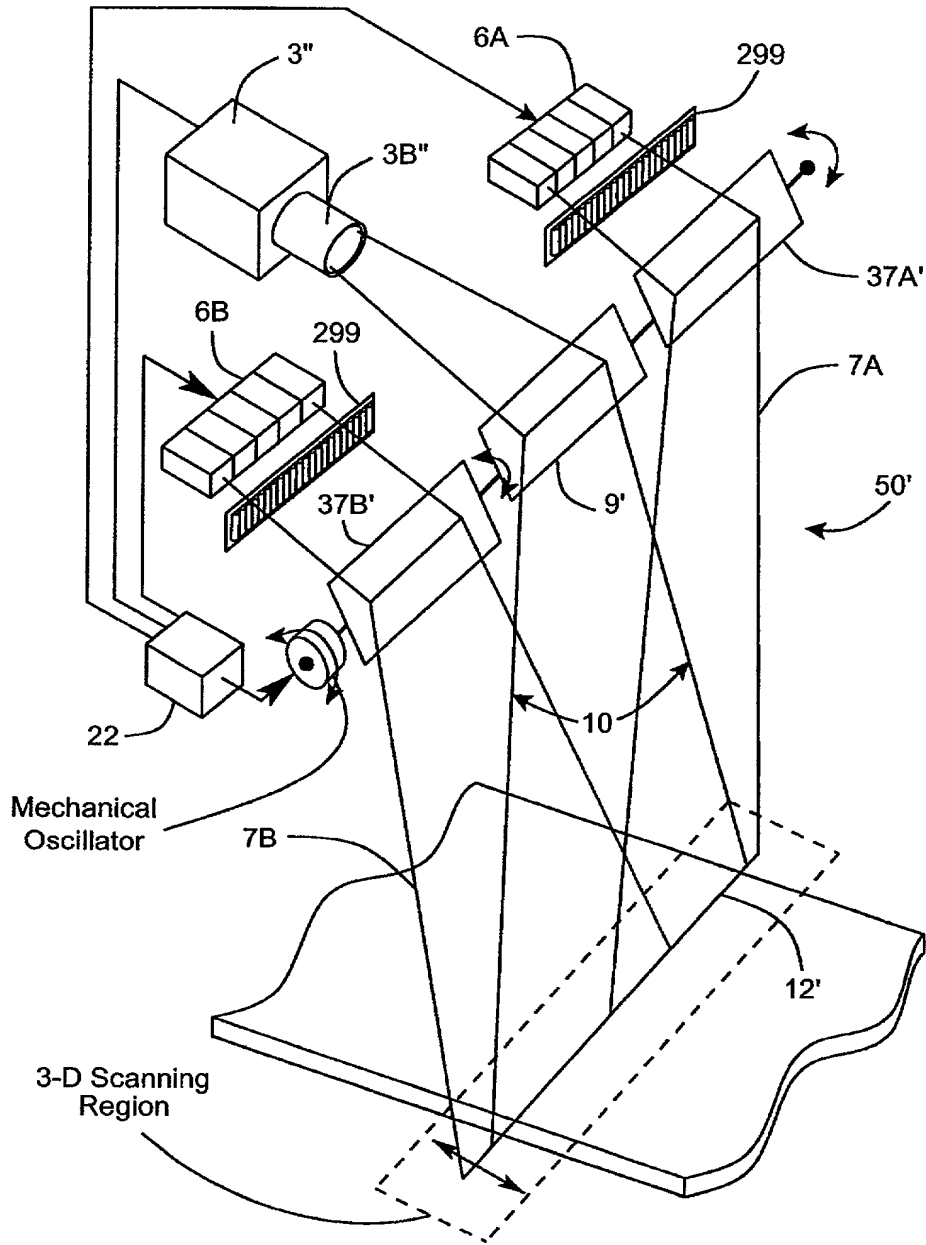


FIG. 3J2



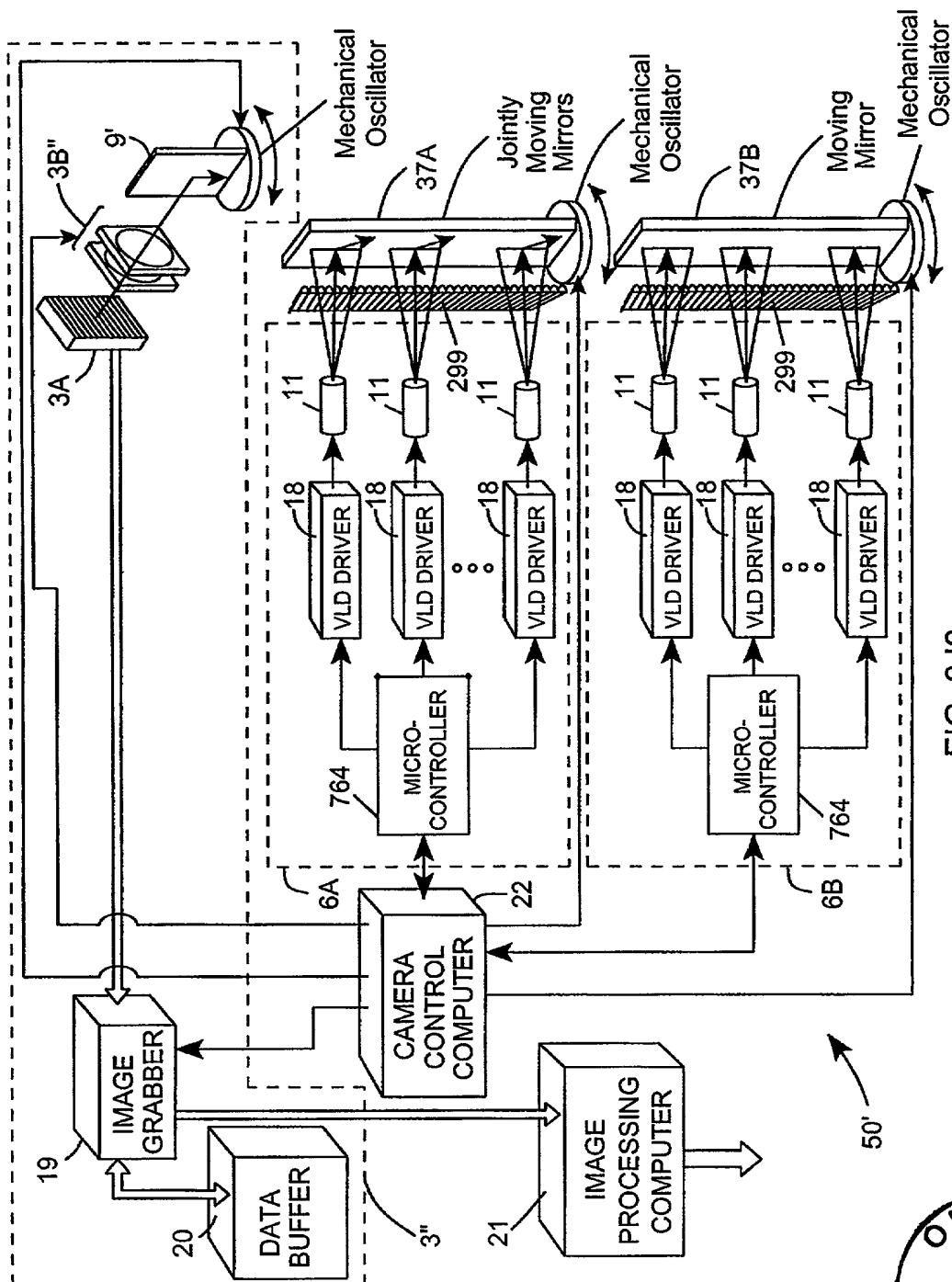
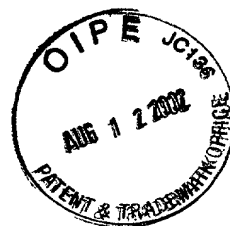


FIG. 3J3



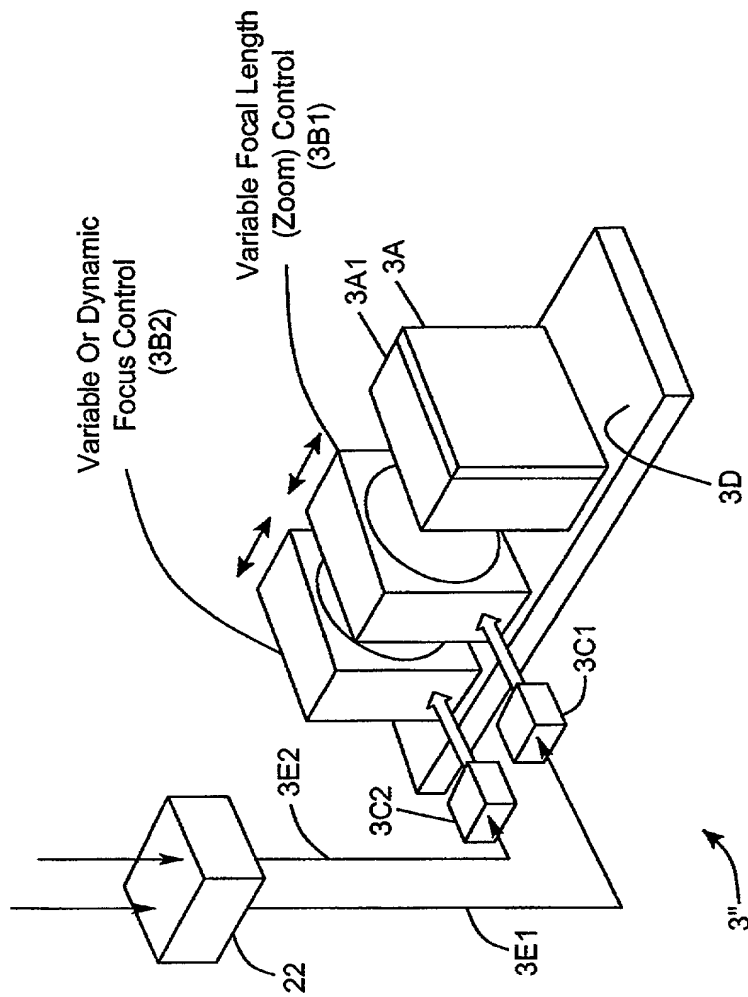


FIG. 3J4



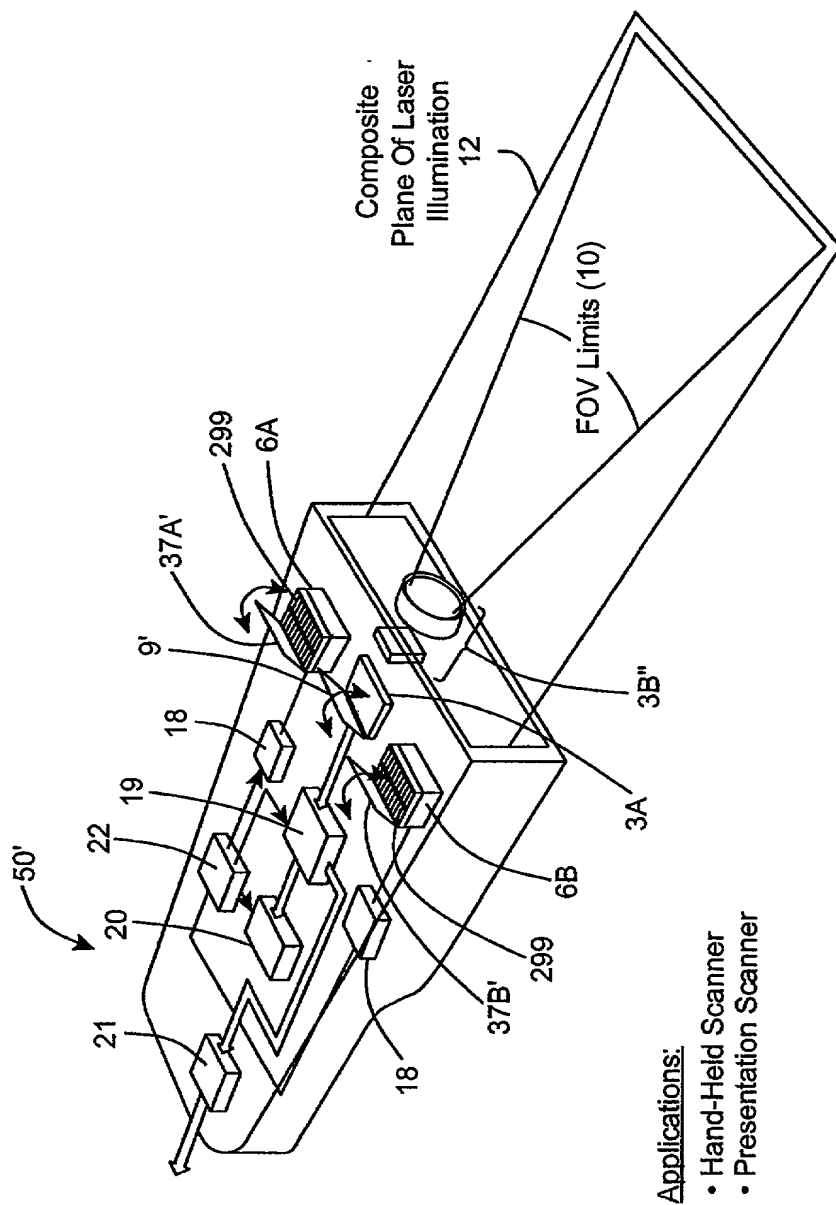
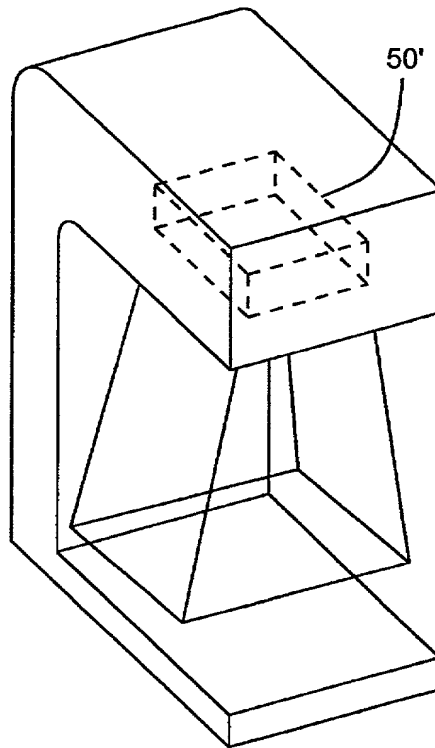


FIG. 3J5



20067440.081202



2-D Hold-under Scanner

FIG. 3J6



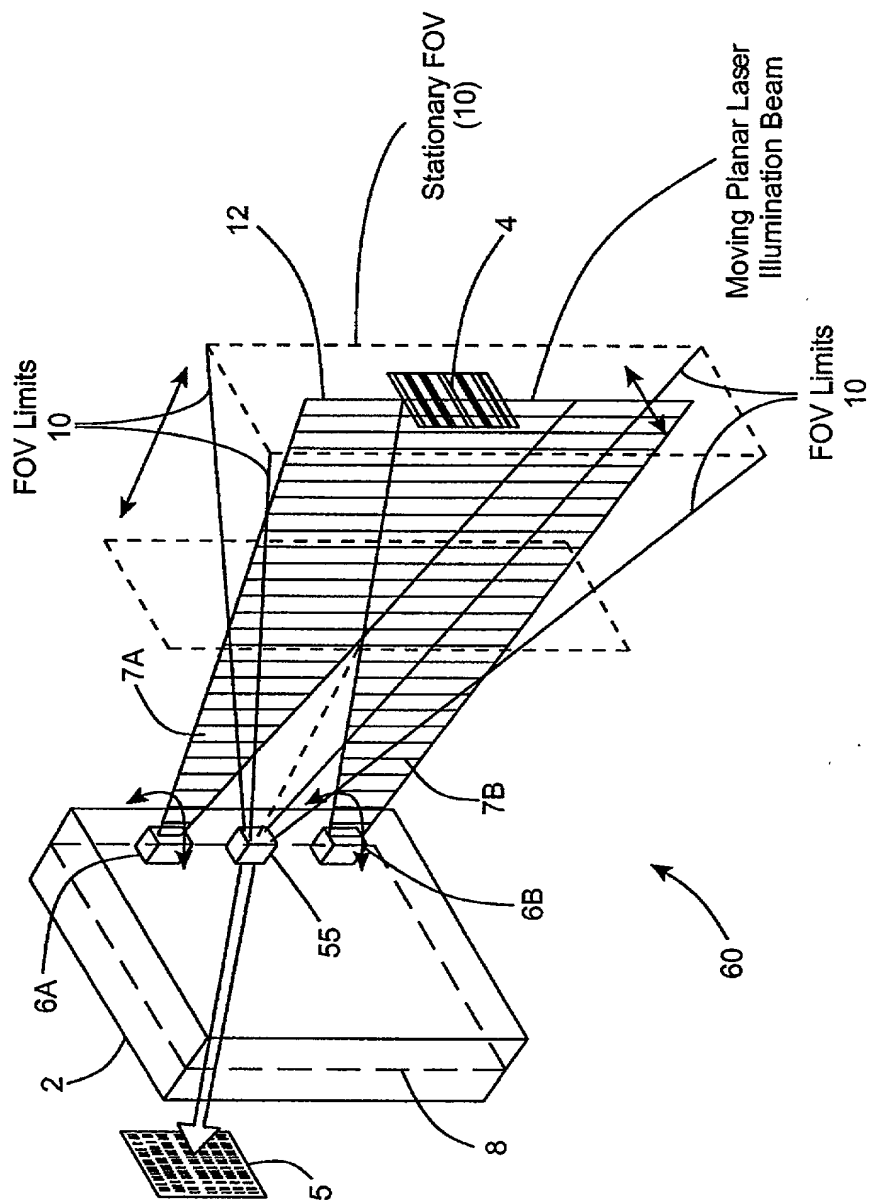


FIG. 4A



202180-04129001

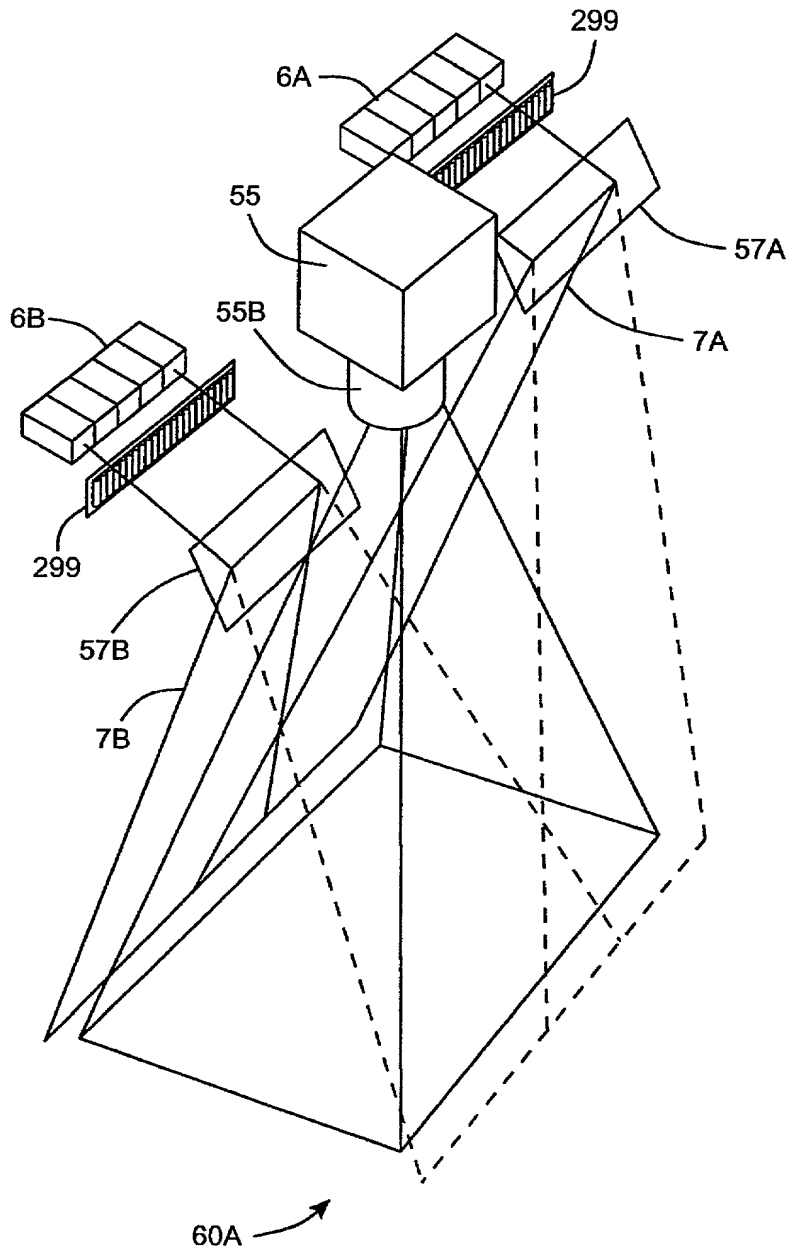


FIG. 4B1



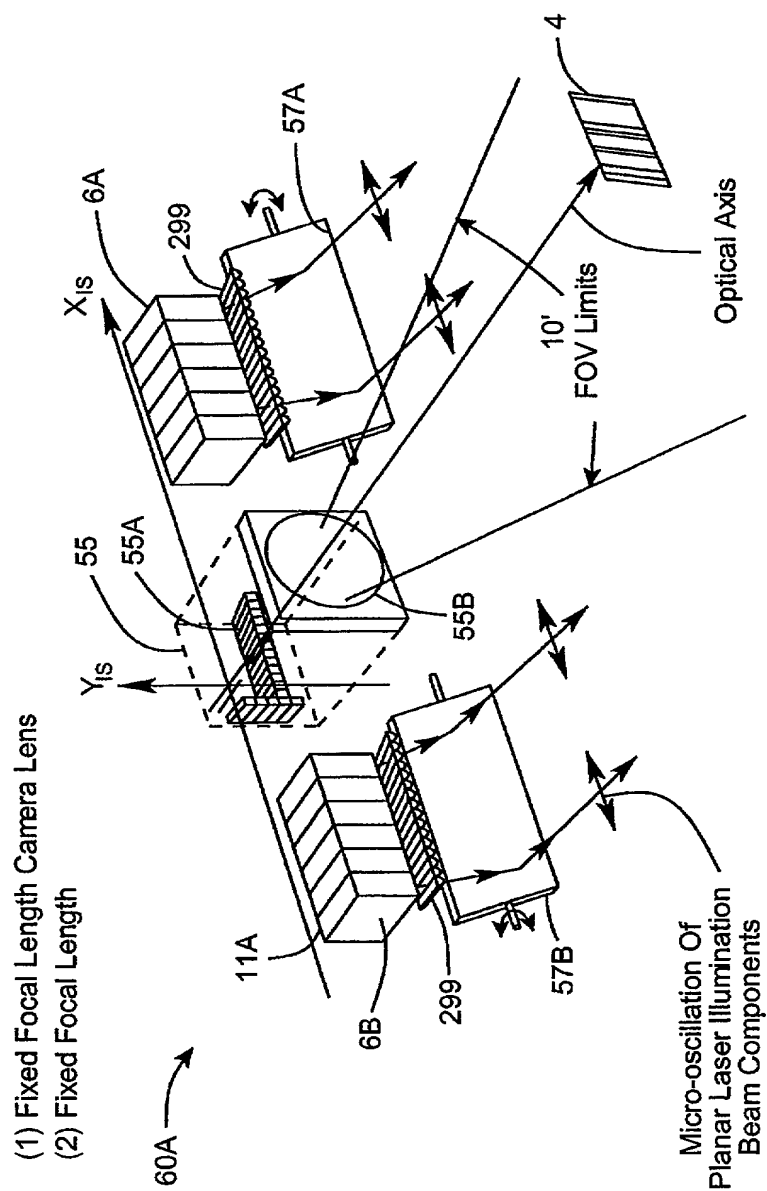
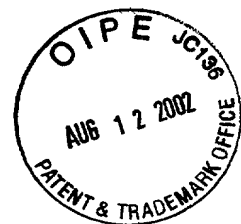
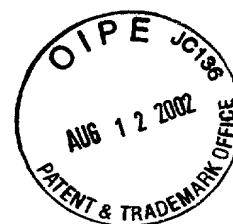
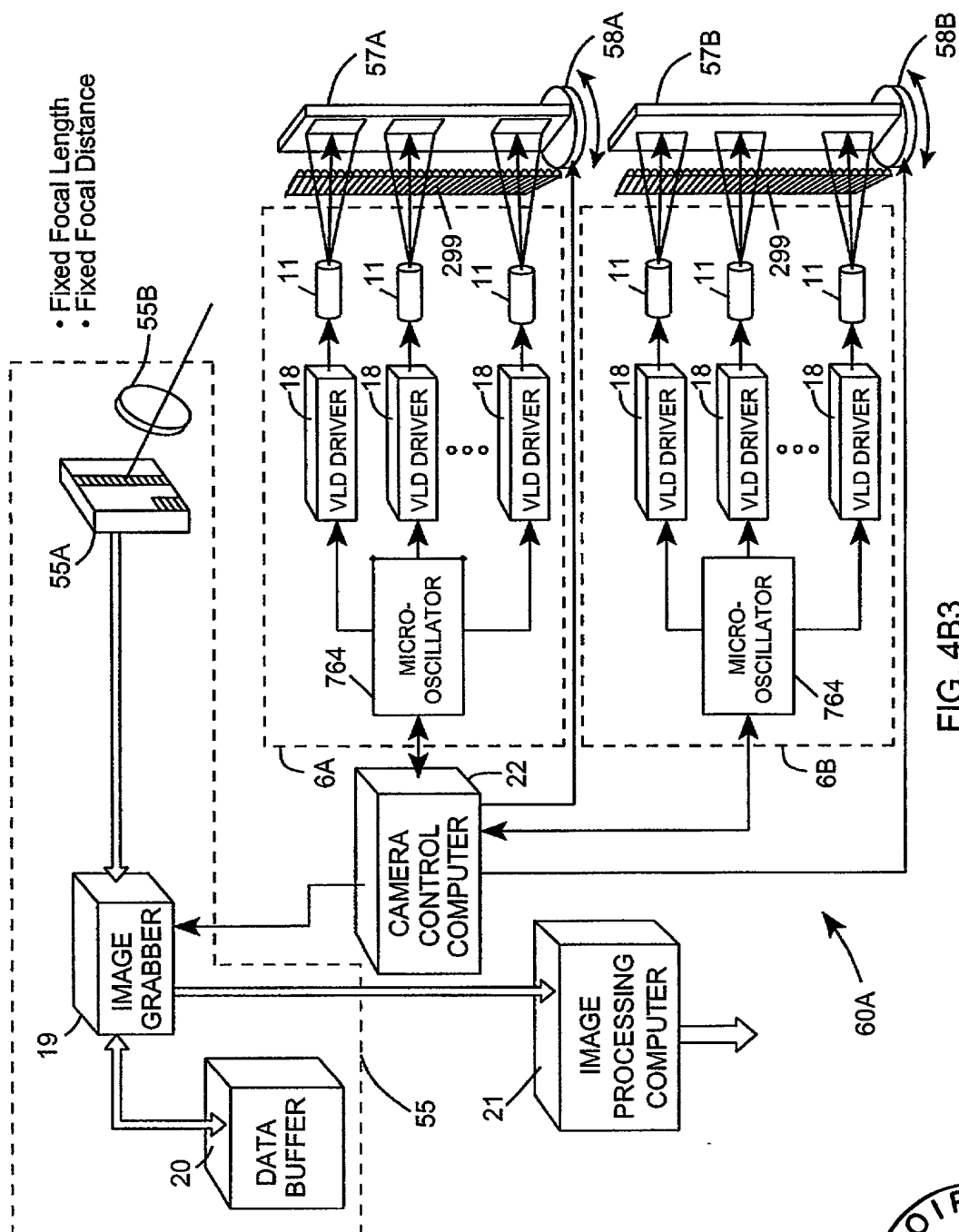


FIG. 4B2





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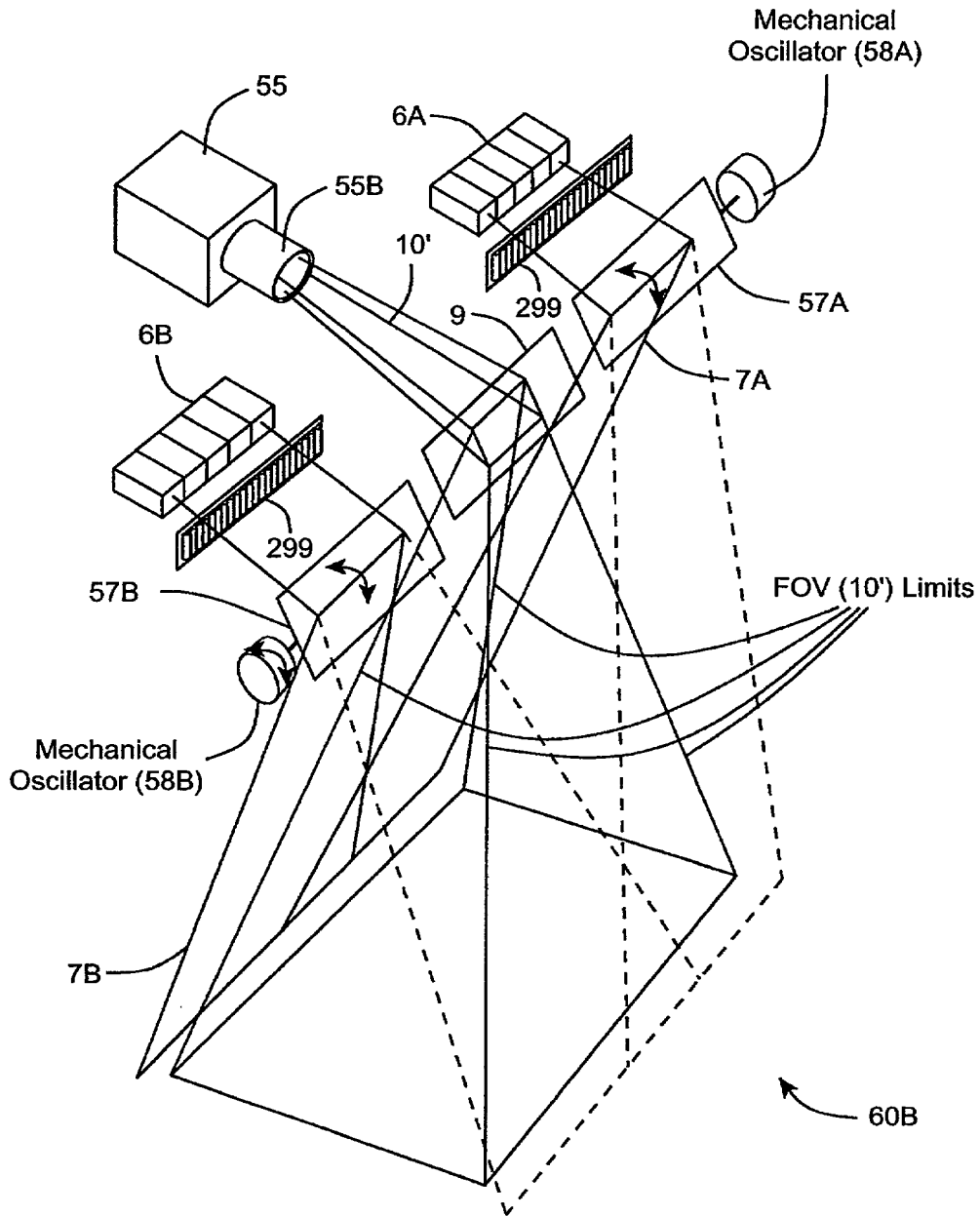


FIG. 4C1



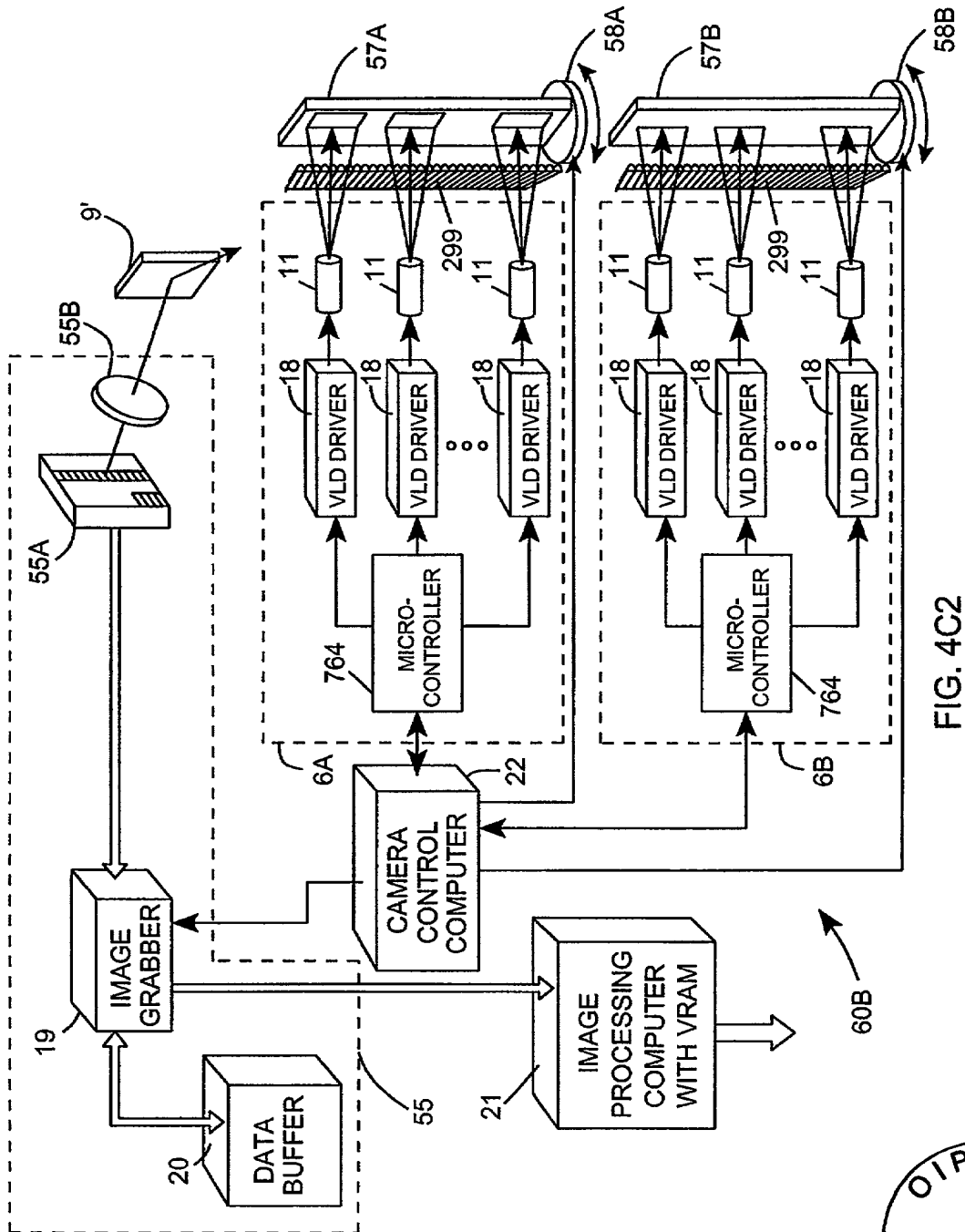
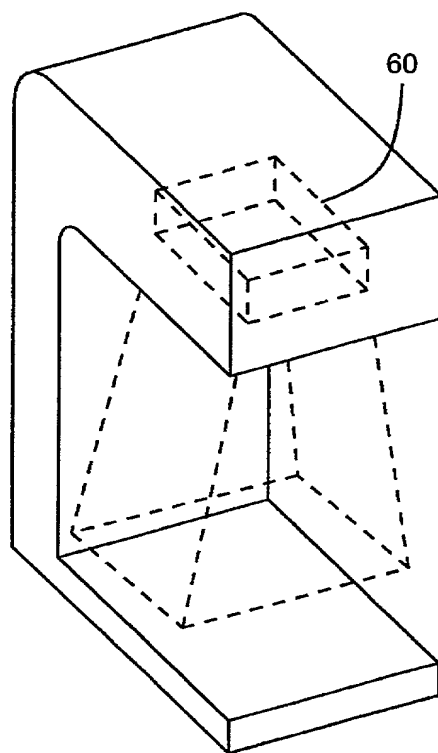


FIG. 4C2



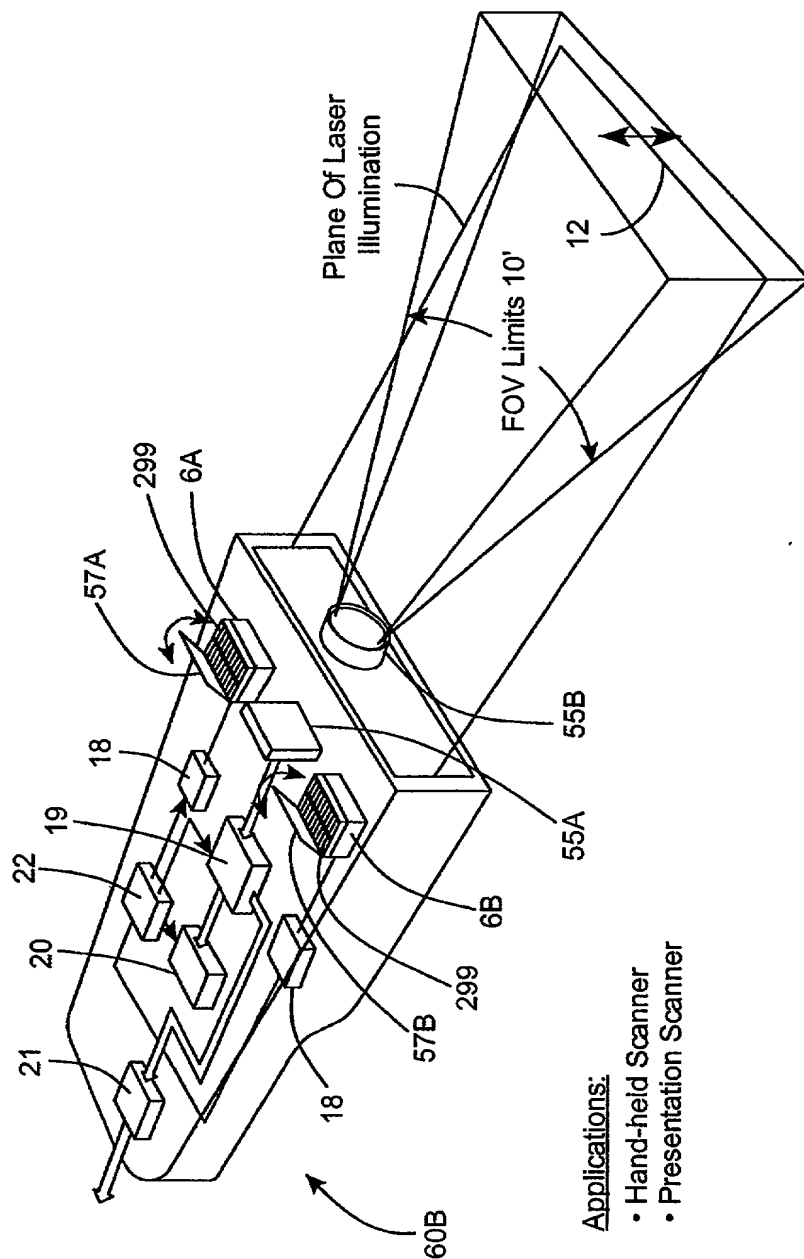
202120104120001



2-D Hold-under Scanner

FIG. 4D





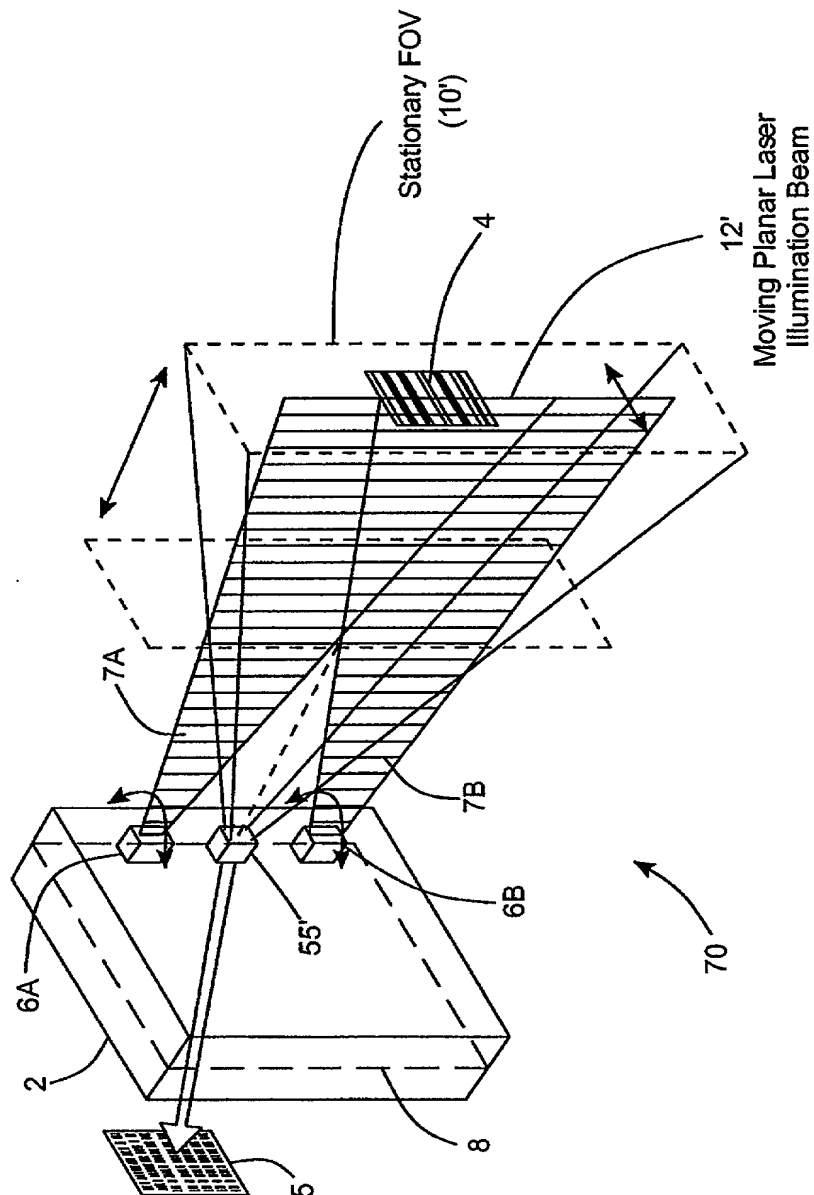


FIG. 5A



20210010412001

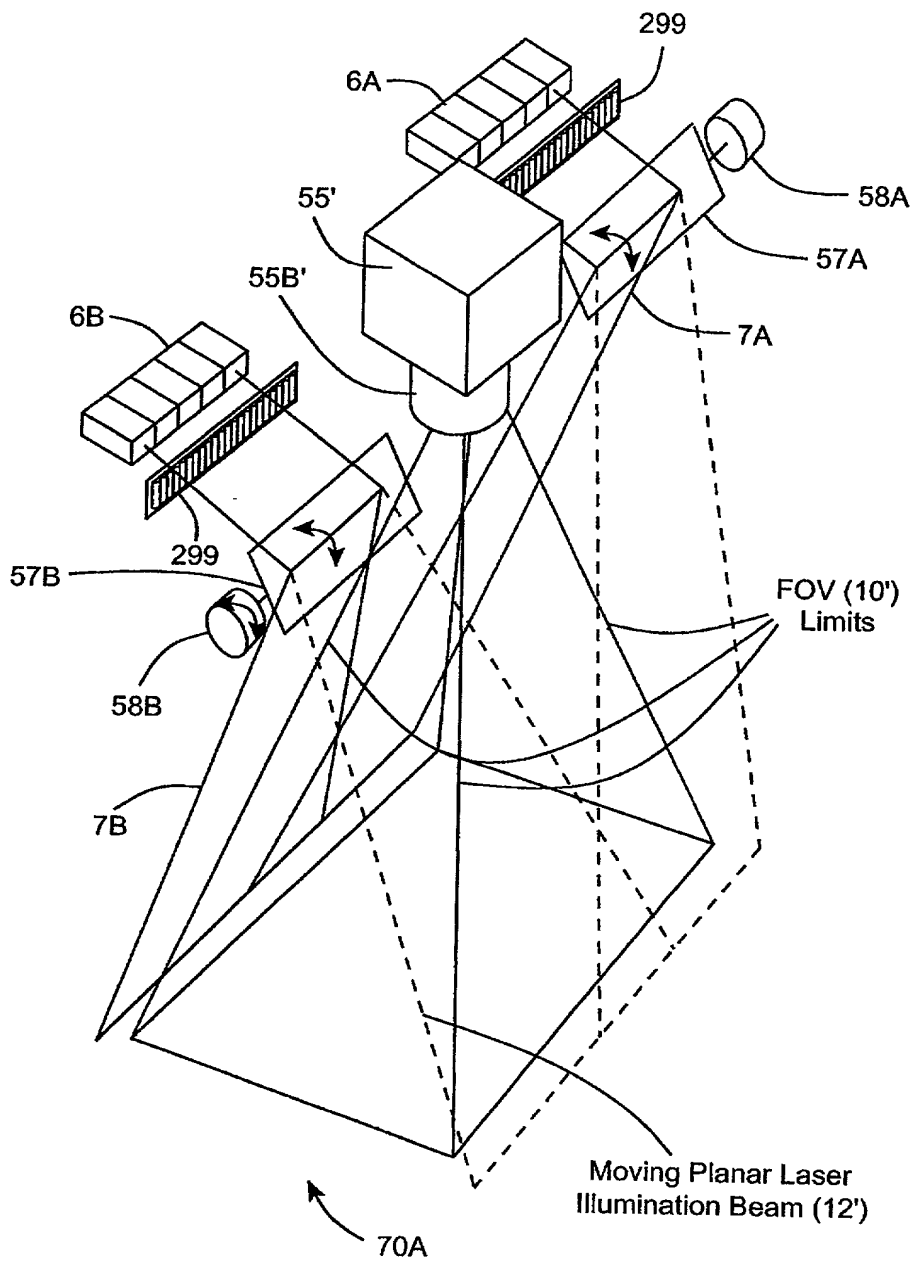


FIG. 5B1



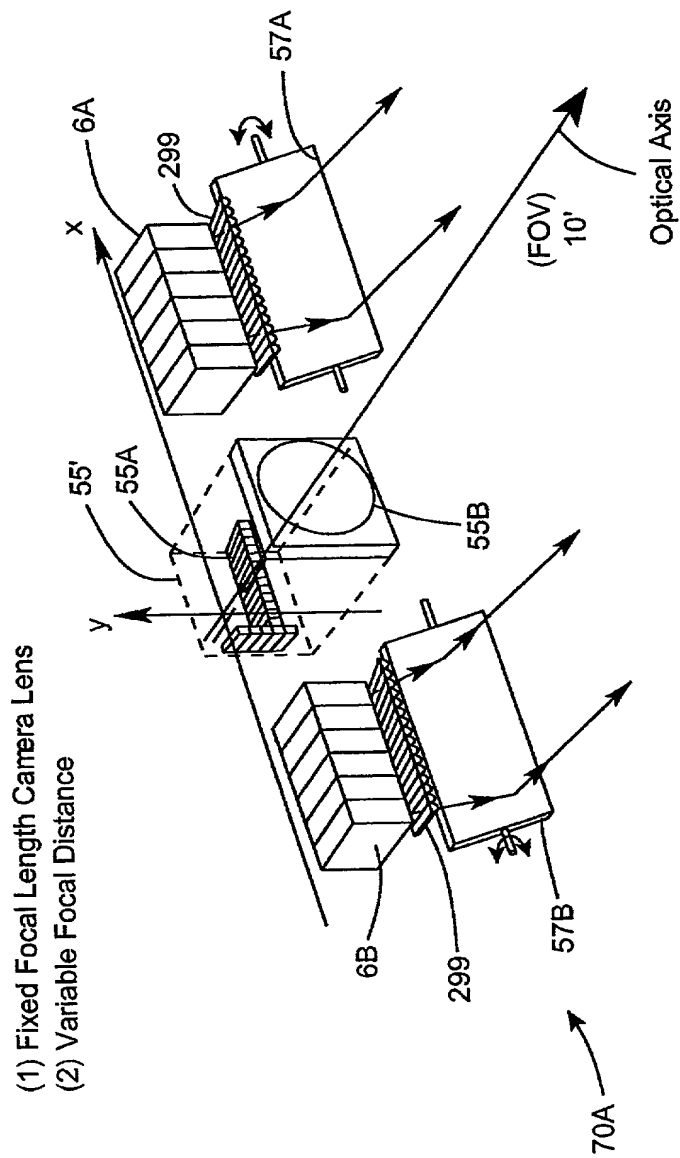
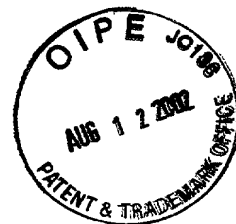


FIG. 5B2



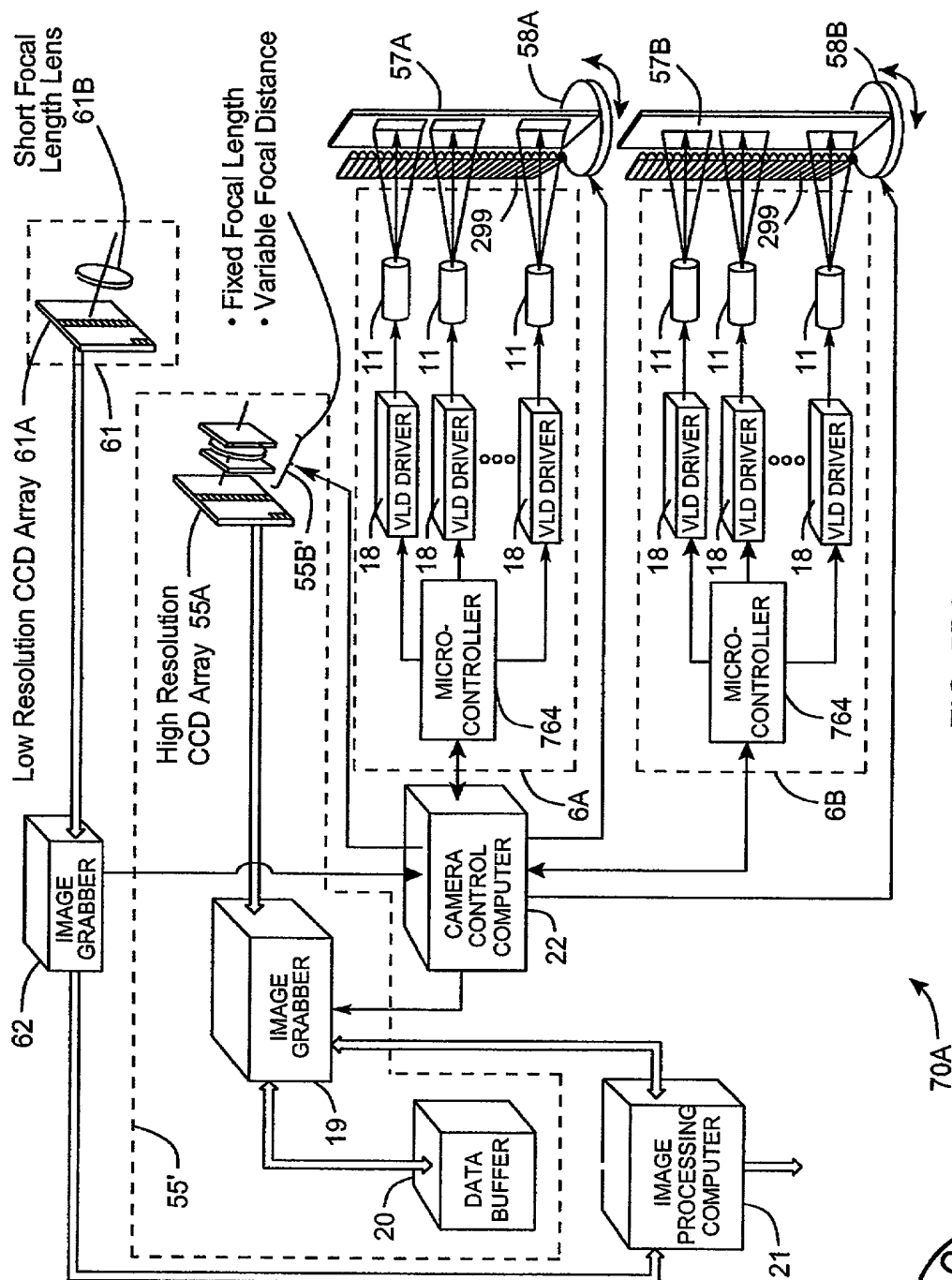
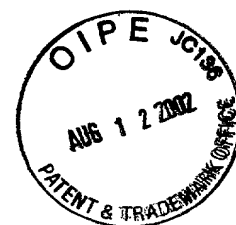


FIG. 5B3

70A



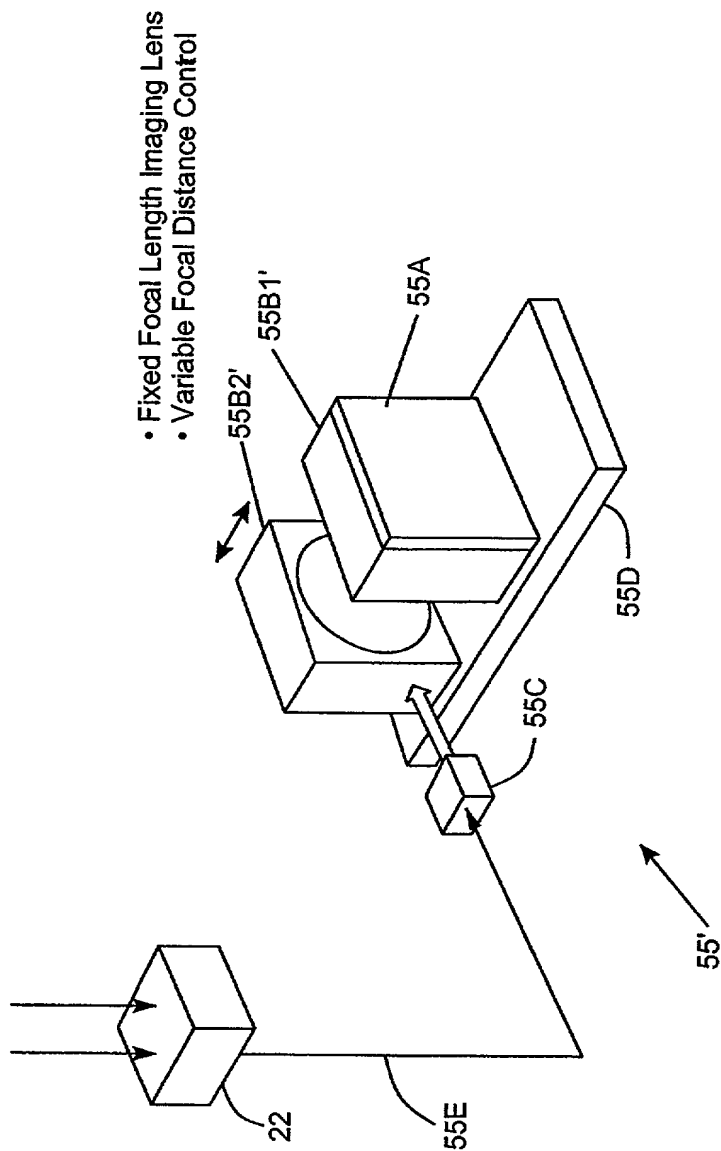


FIG. 5B4

2021500-04129001

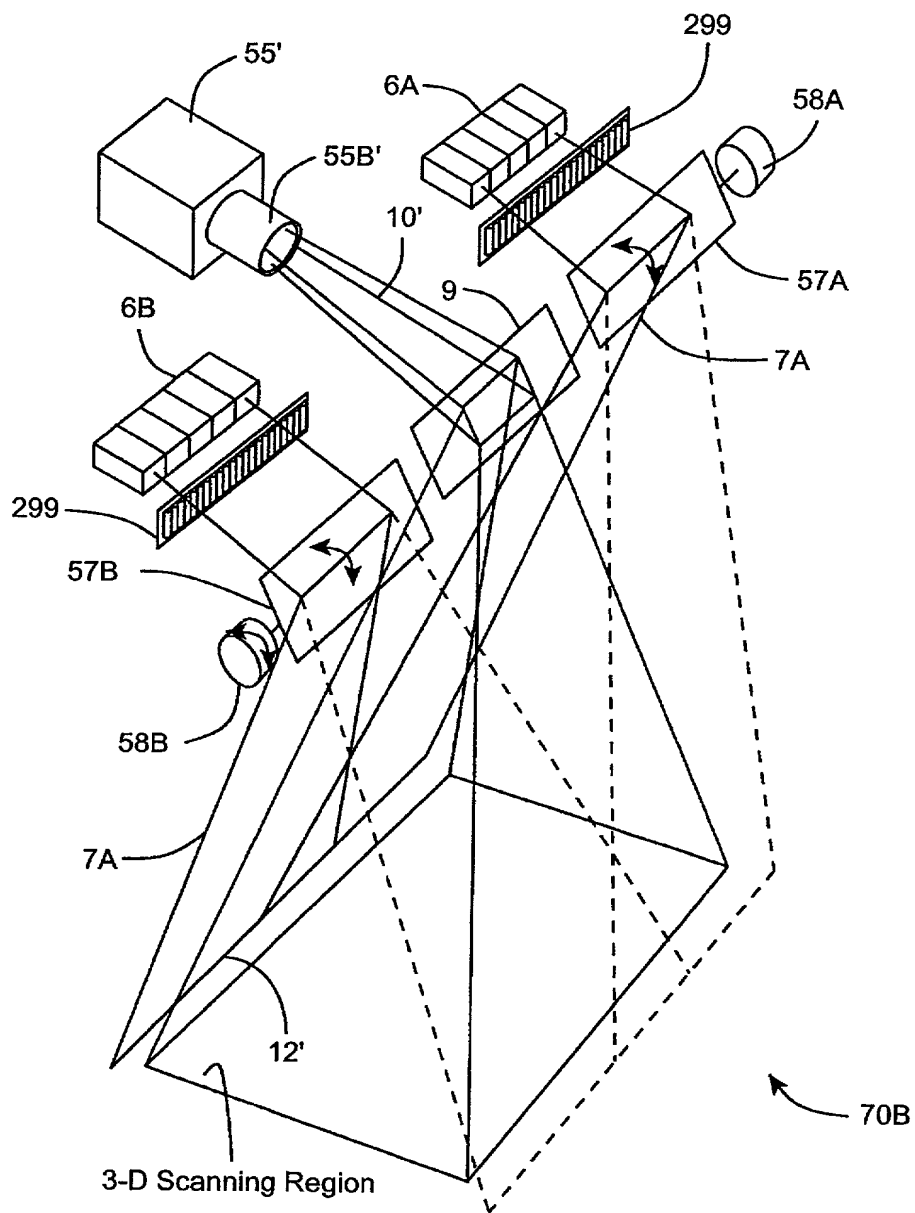


FIG. 5C1



- (1) Variable Focal Length Camera Lens
- (2) Fixed Focal Distance

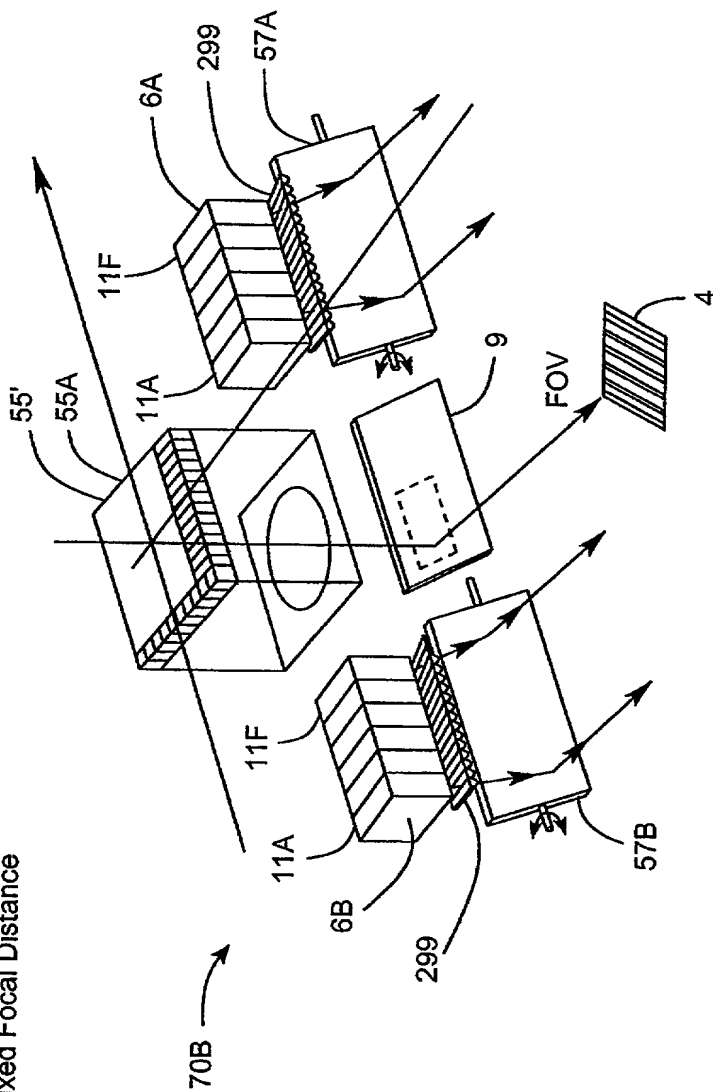


FIG. 5C2



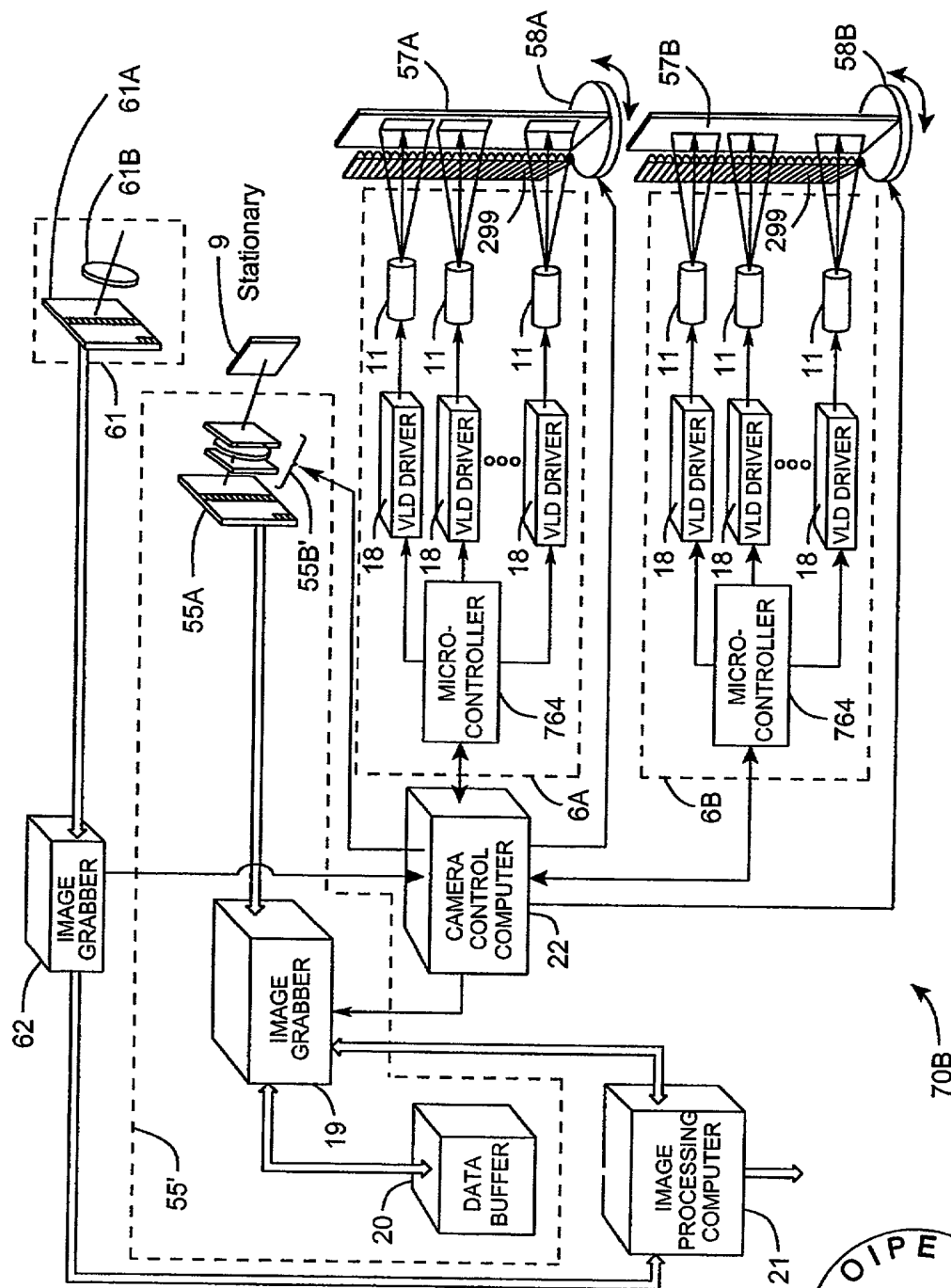
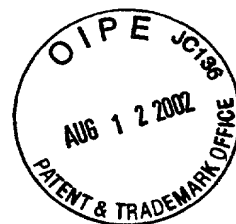


FIG. 5C3



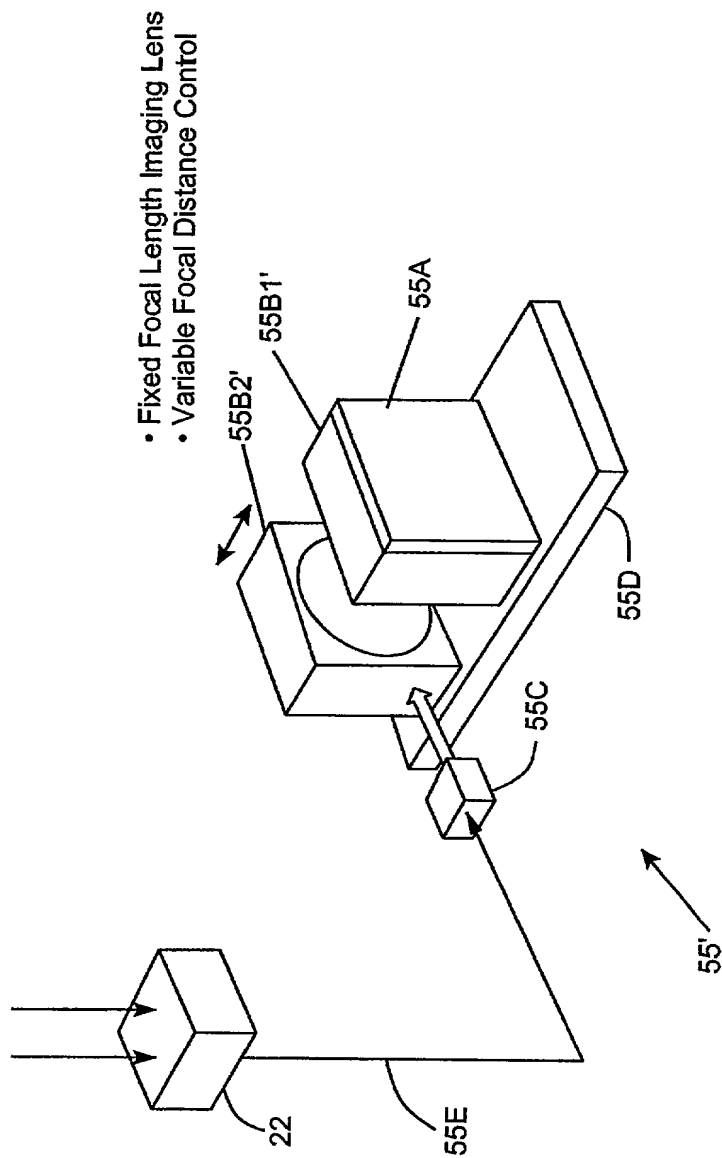


FIG. 5C4



202740-081202

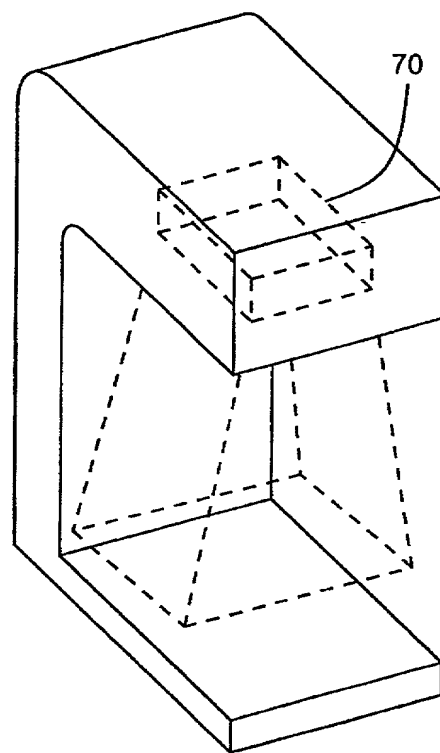
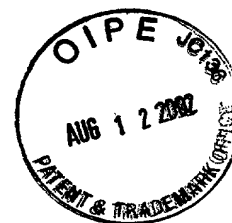


FIG. 5D



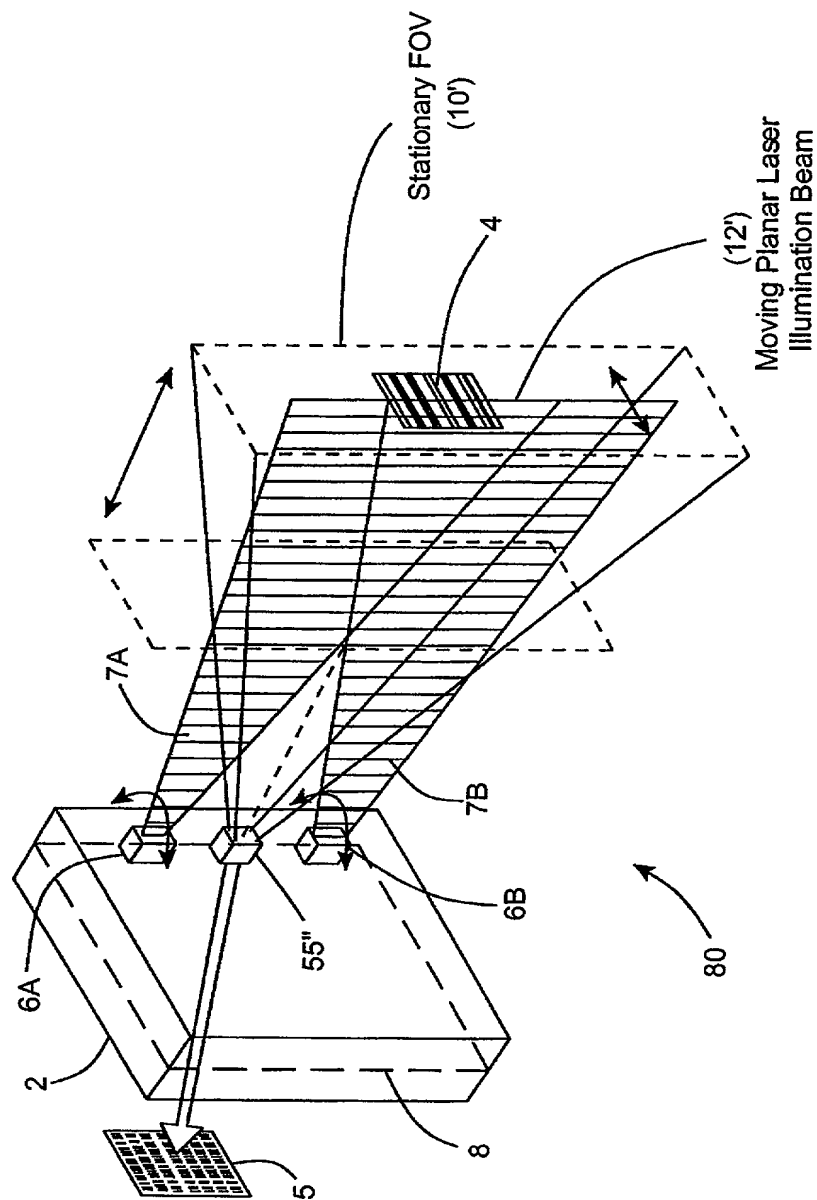
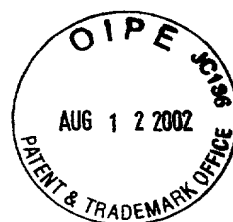


FIG. 6A



20067440-0012001

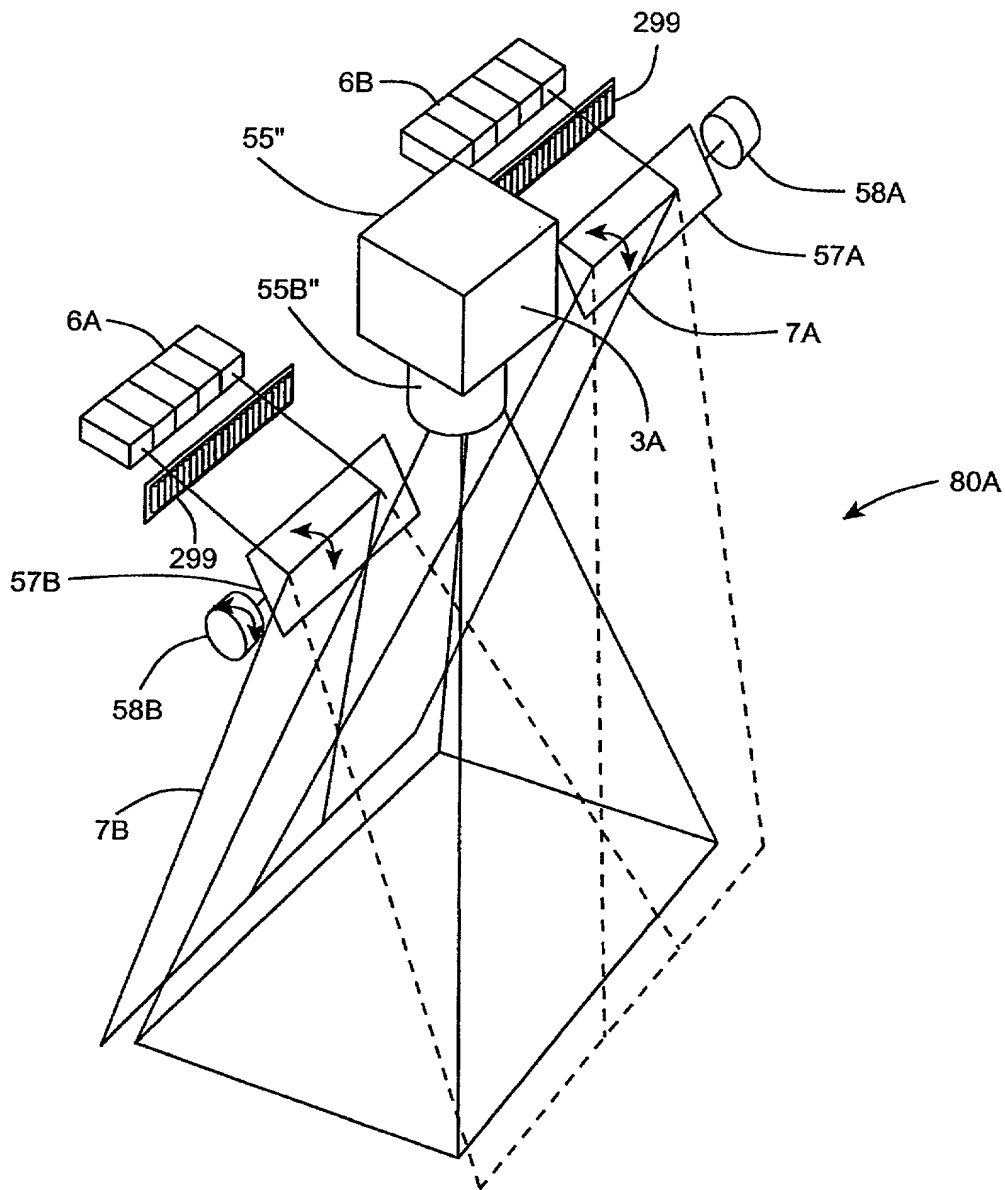


FIG. 6B1



- (1) Variable Focal Length Camera Lens
- (2) Variable Focal Distance

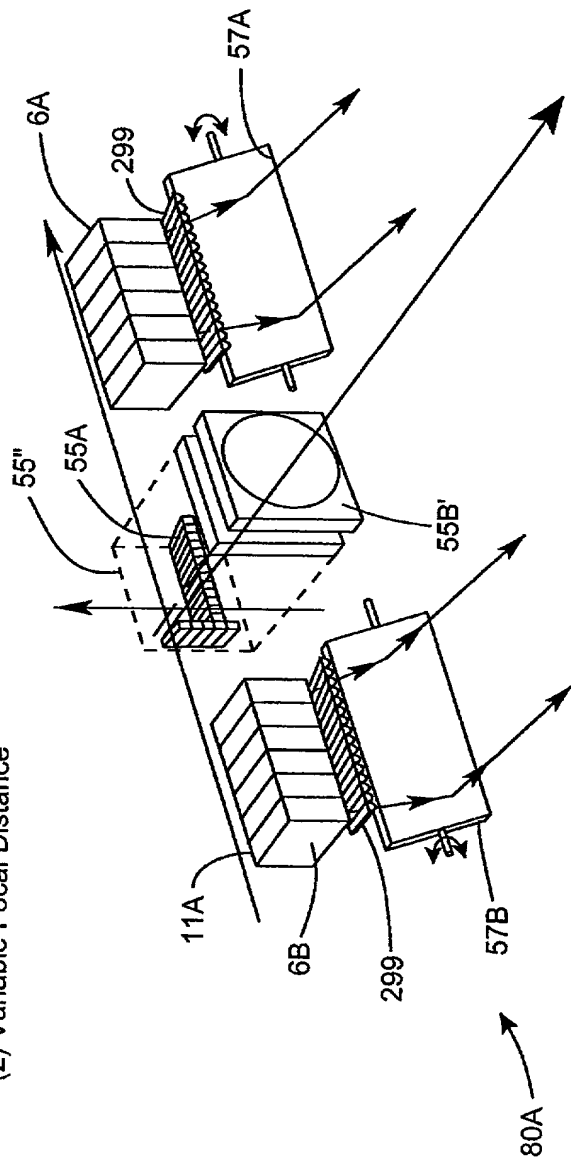
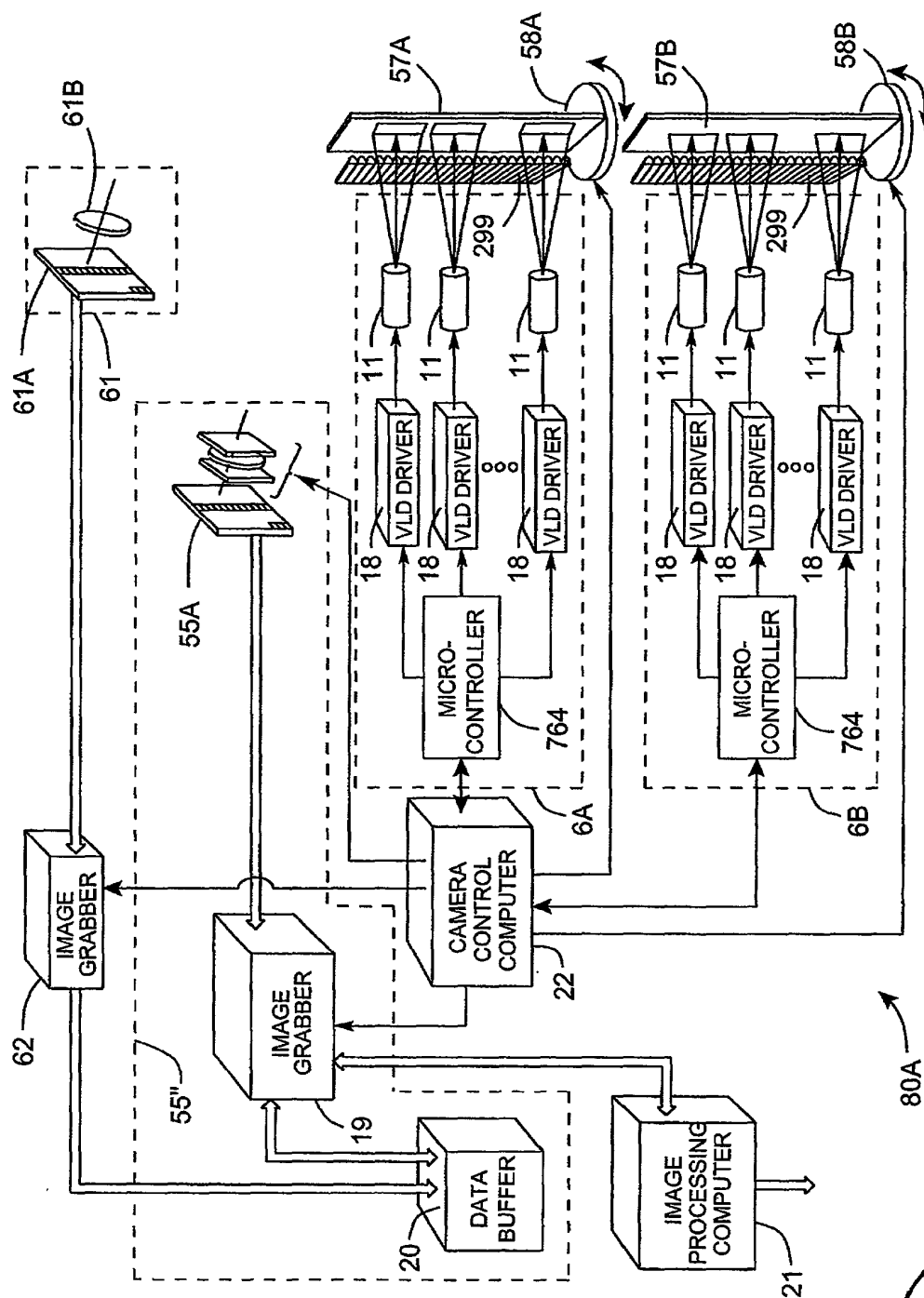


FIG. 6B2





2002-01-22

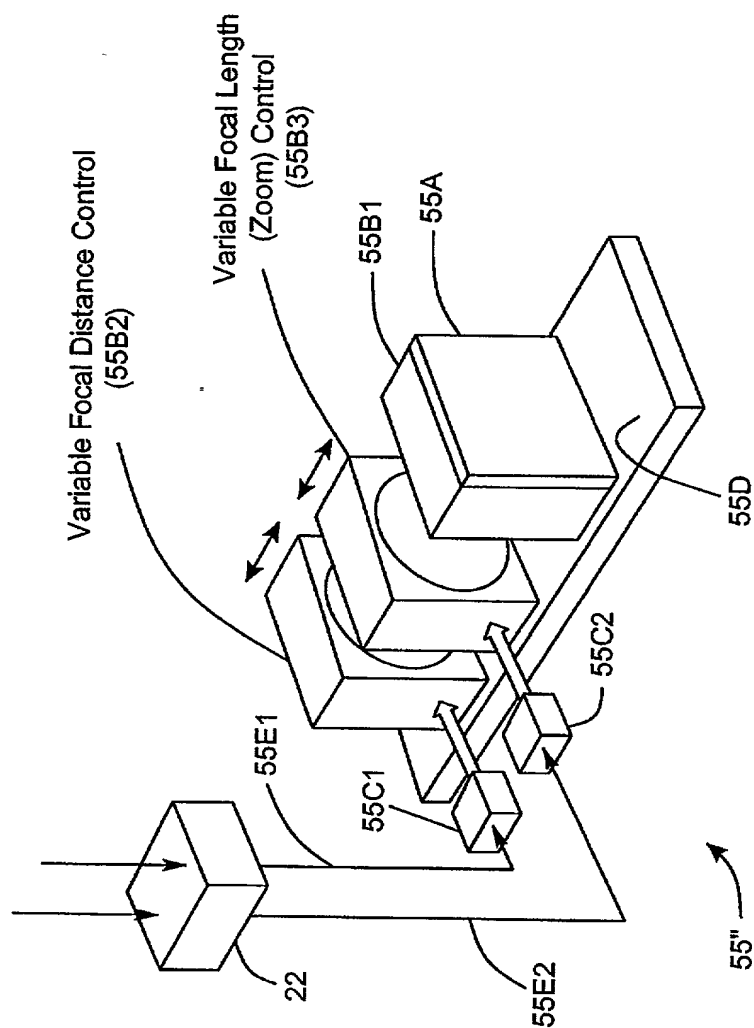


FIG. 6B4



202180-0429001

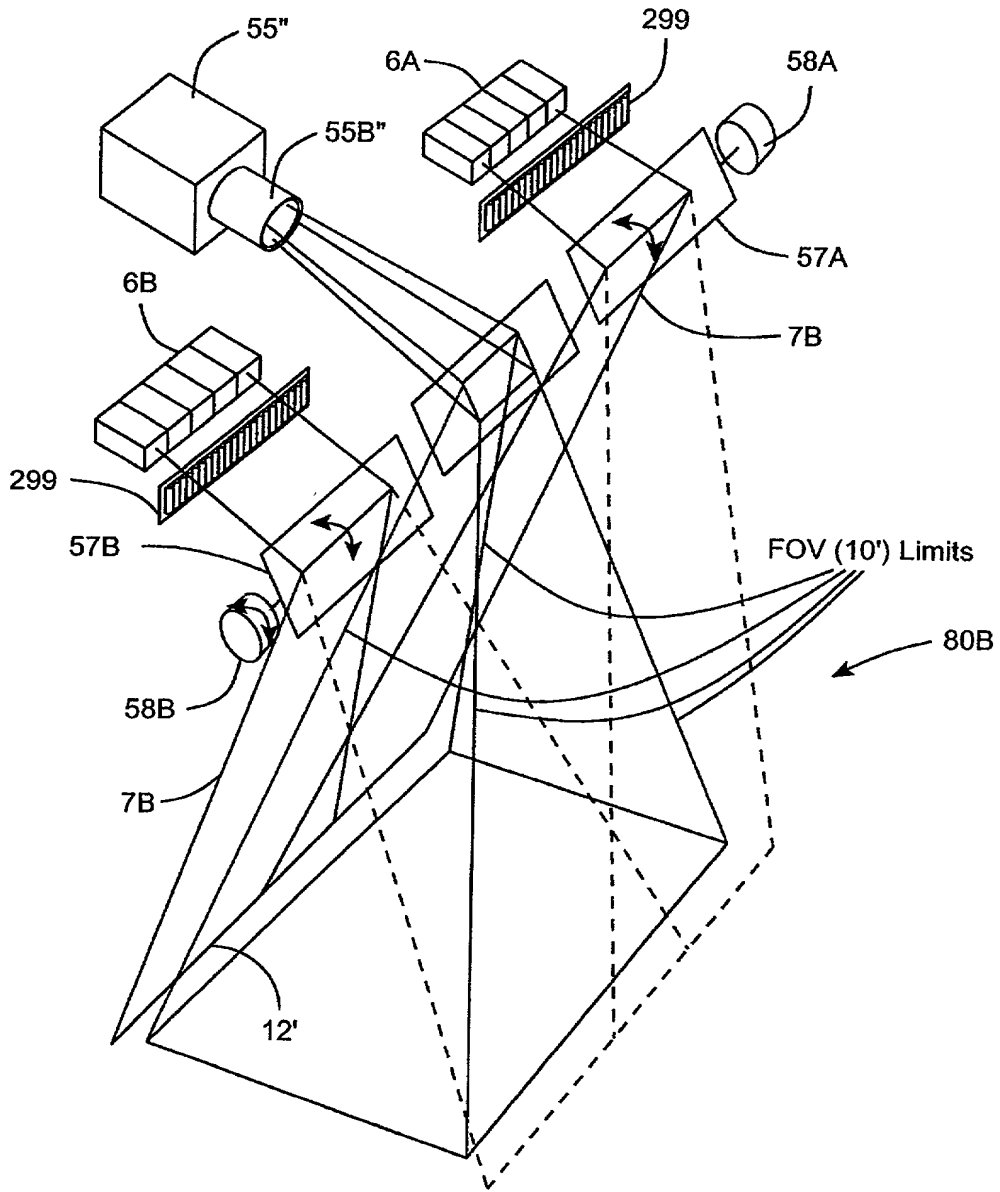


FIG. 6C1



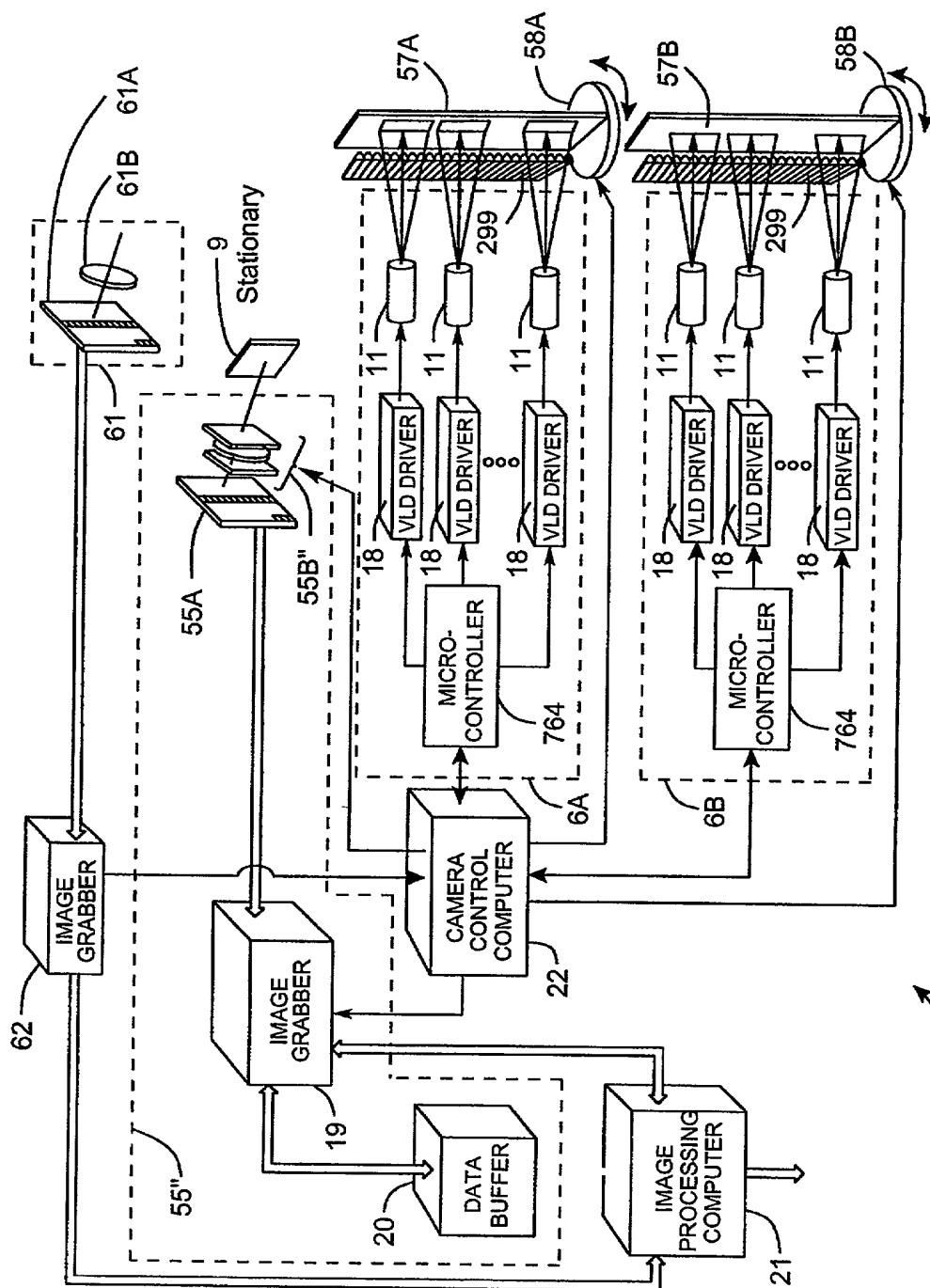


FIG. 6C3



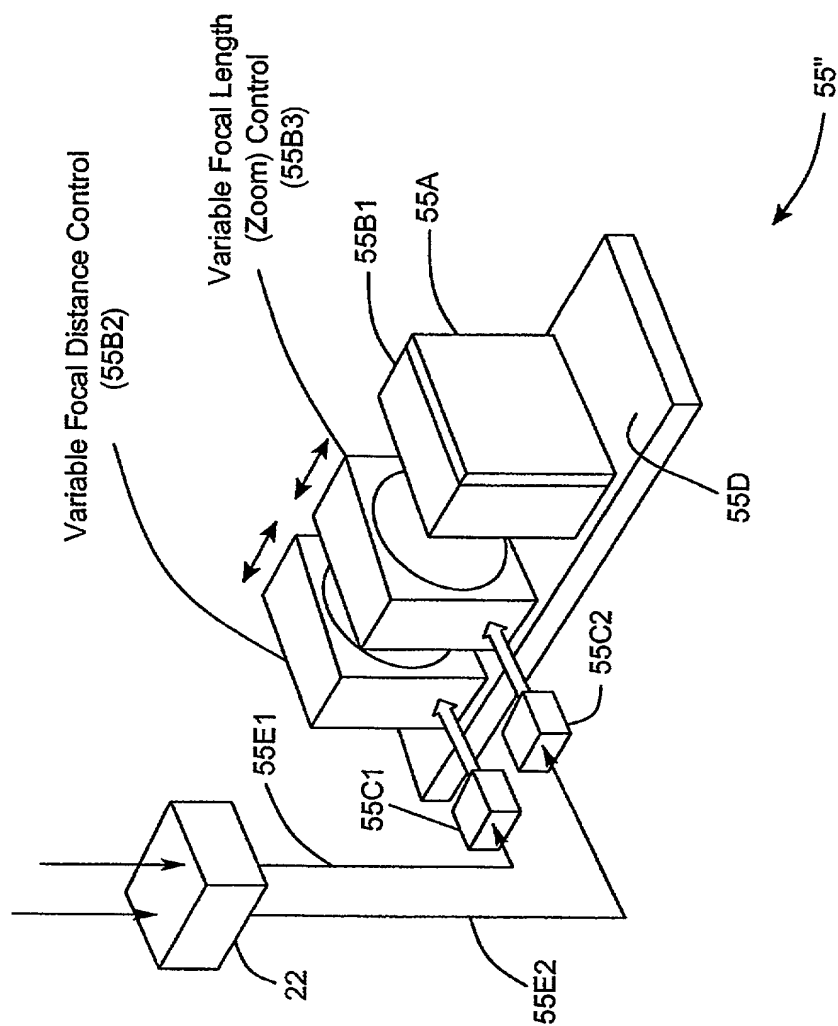


FIG. 6C4



2007-11-01 10:00:00

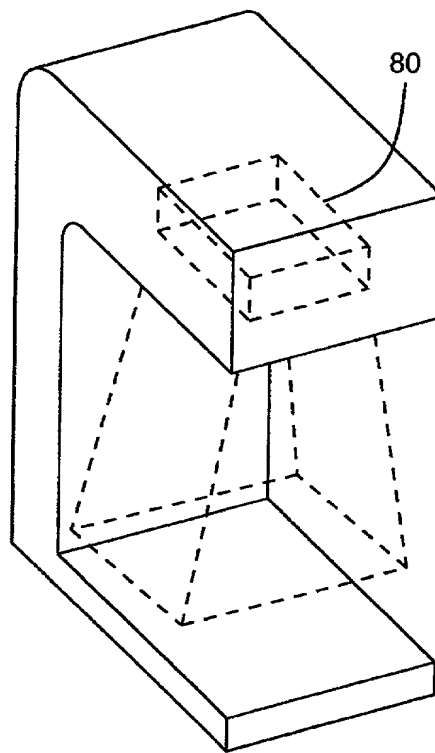
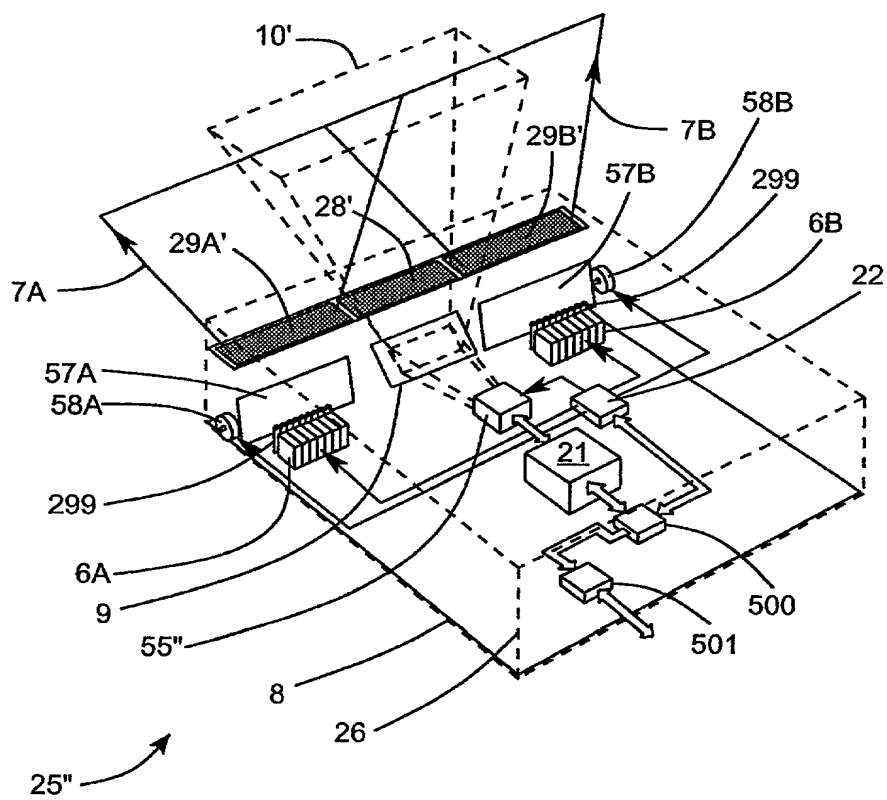


FIG. 6C5



2002F80" 04T 2900T



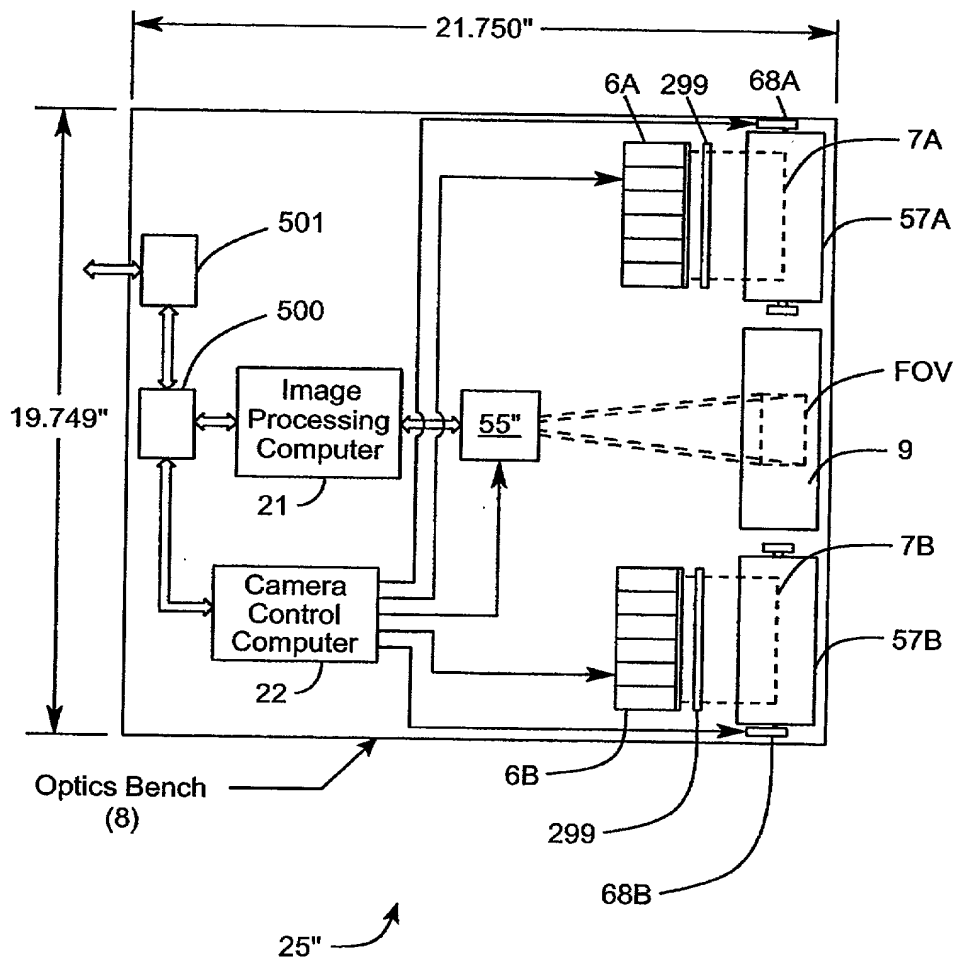


FIG. 6D2



202180 04129001

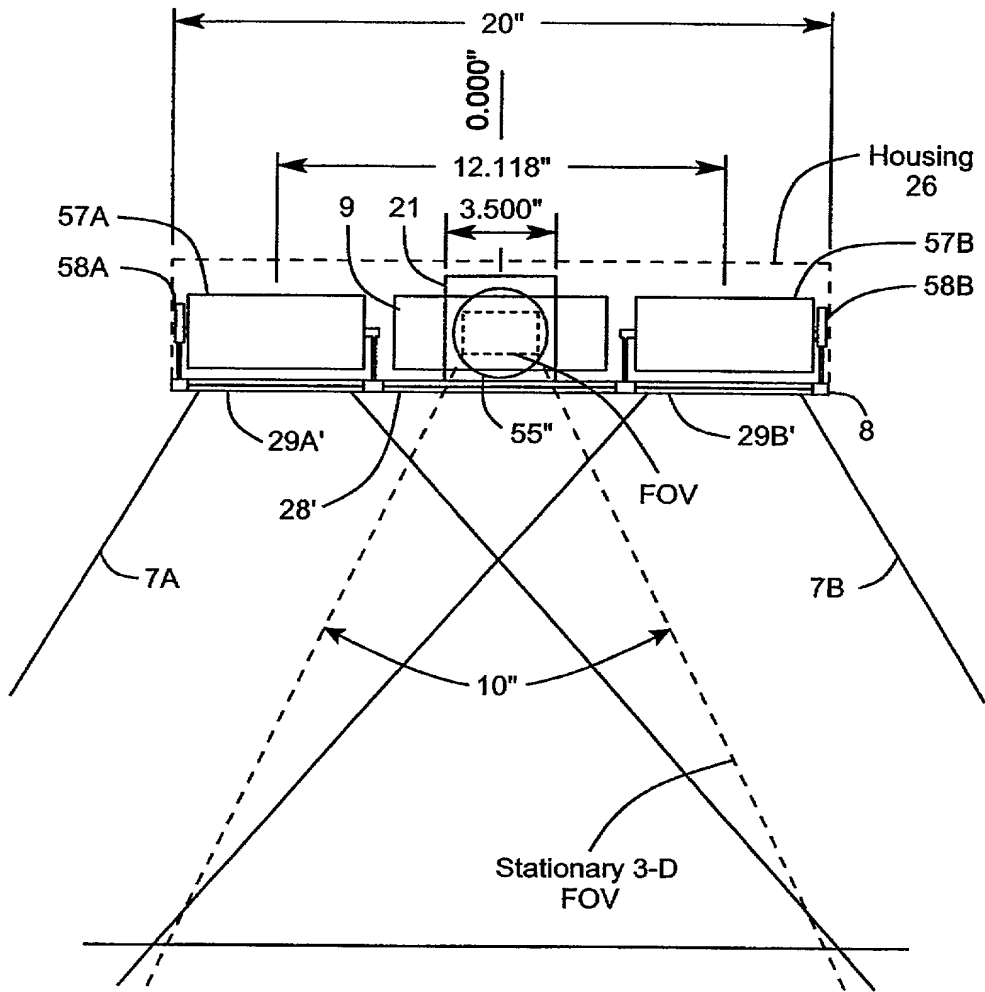


FIG. 6D3



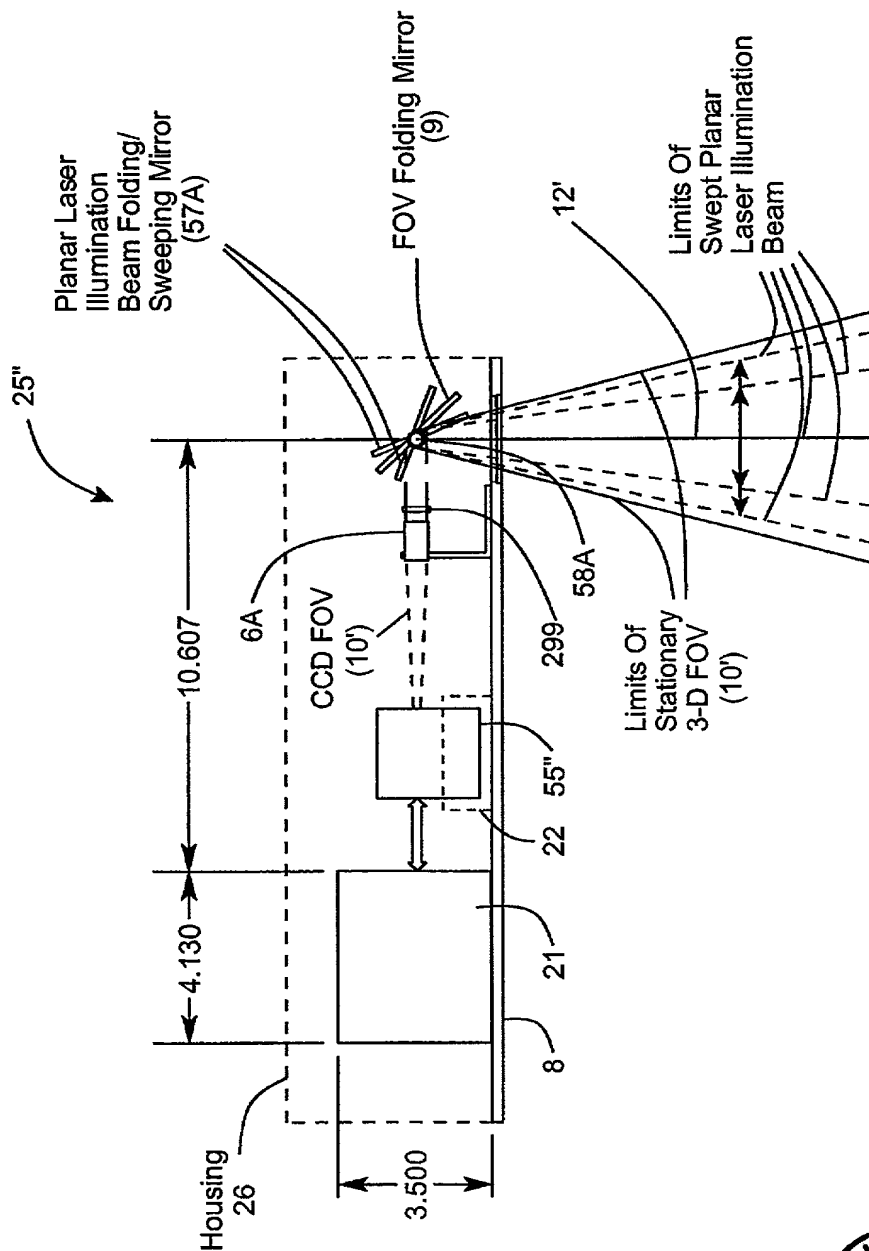
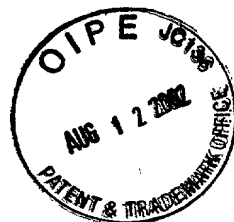


FIG. 6D4



2025 RELEASE UNDER E.O. 14176

* Variable FOV

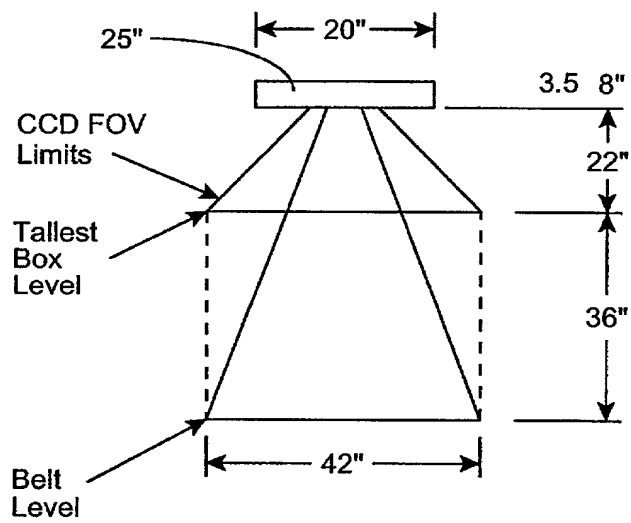


FIG. 6D5



20070404 00000000

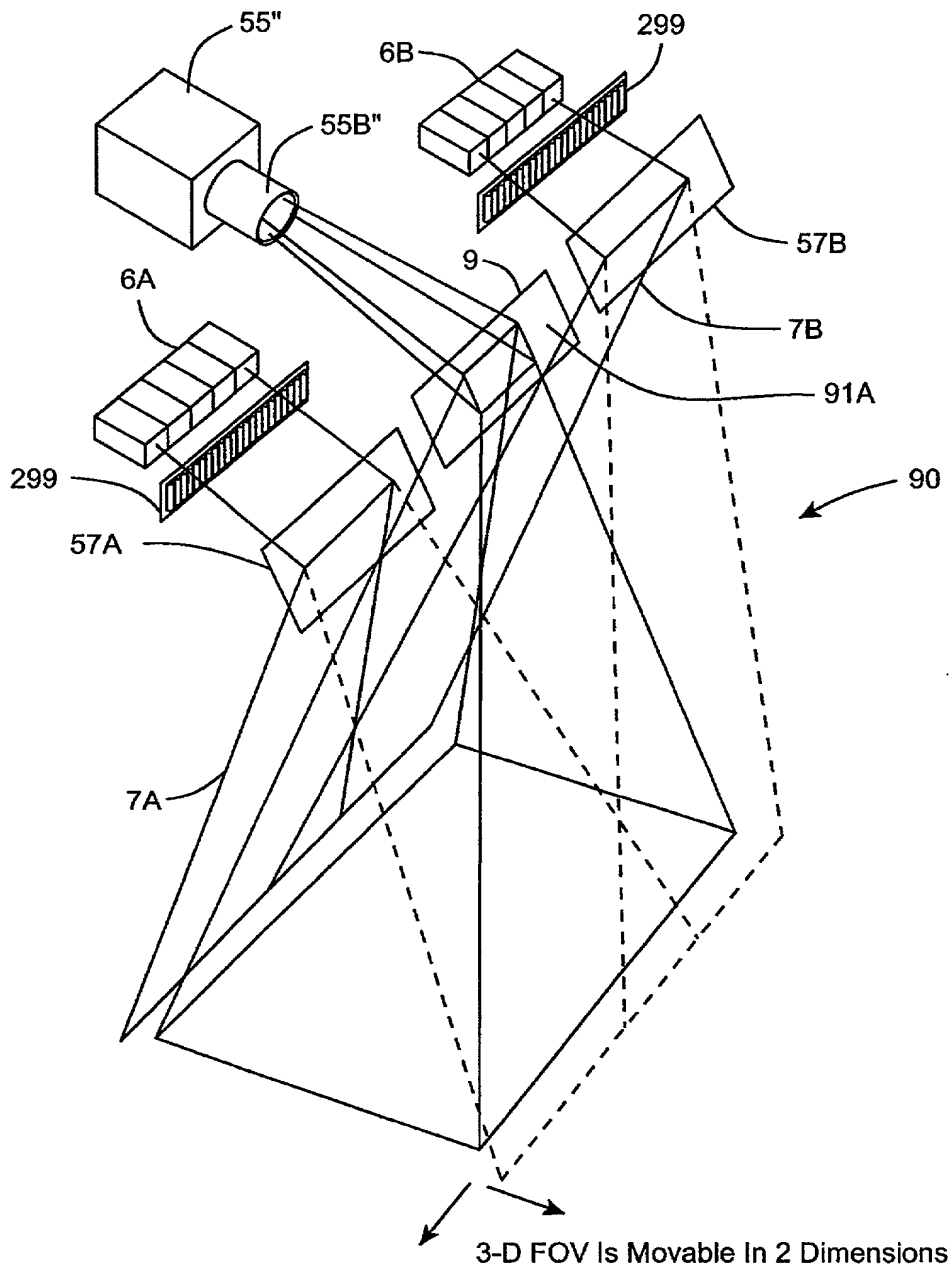


FIG. 6E1



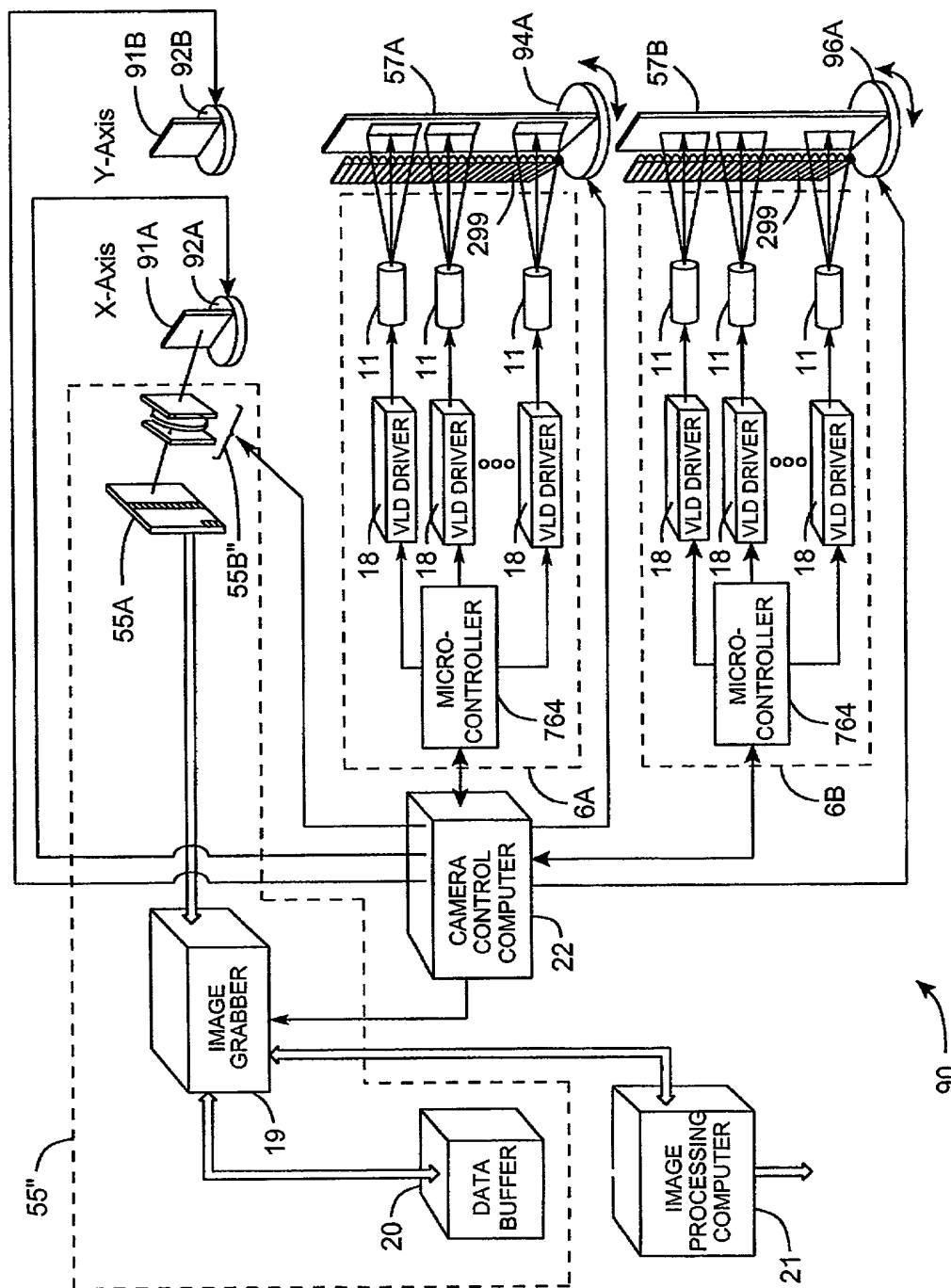


FIG. 6E3



20020414 0001

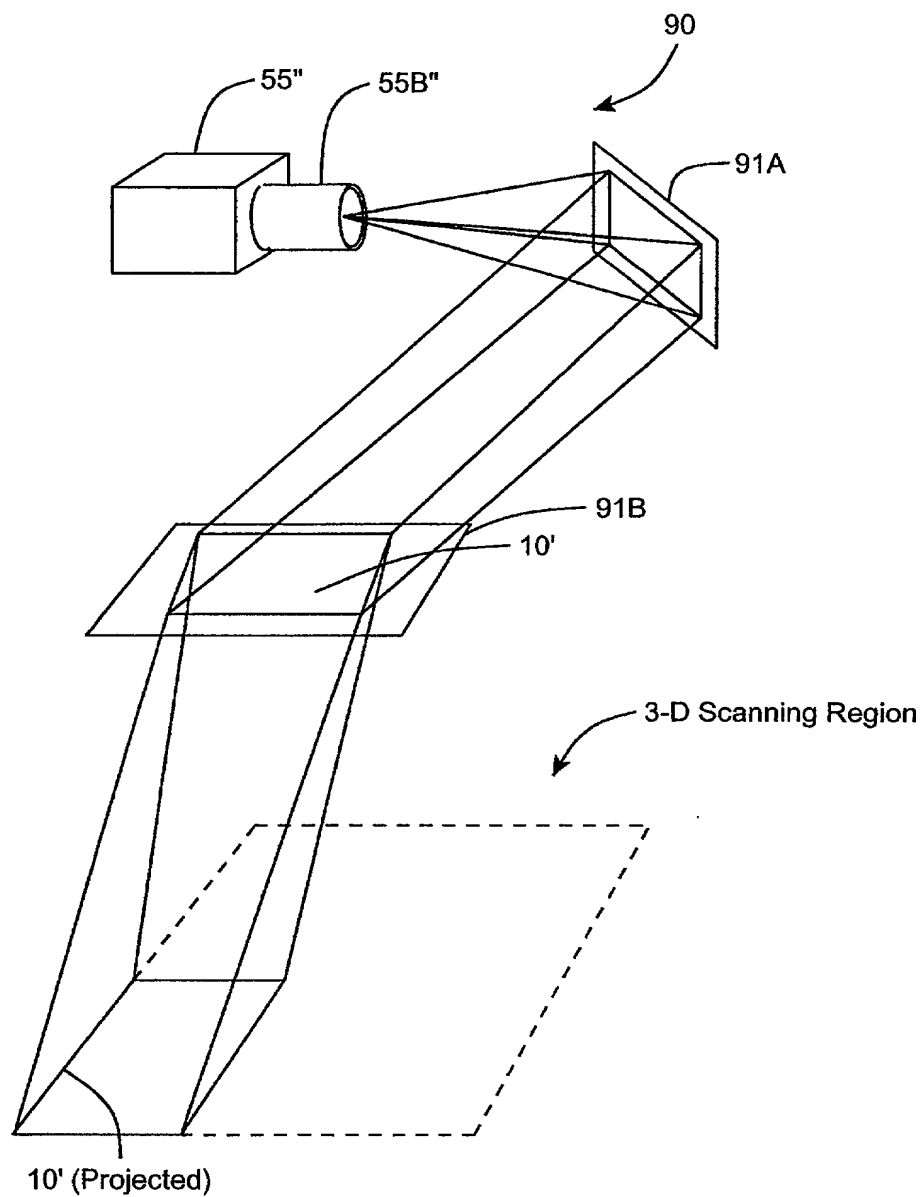


FIG. 6E4



2002F00104729001

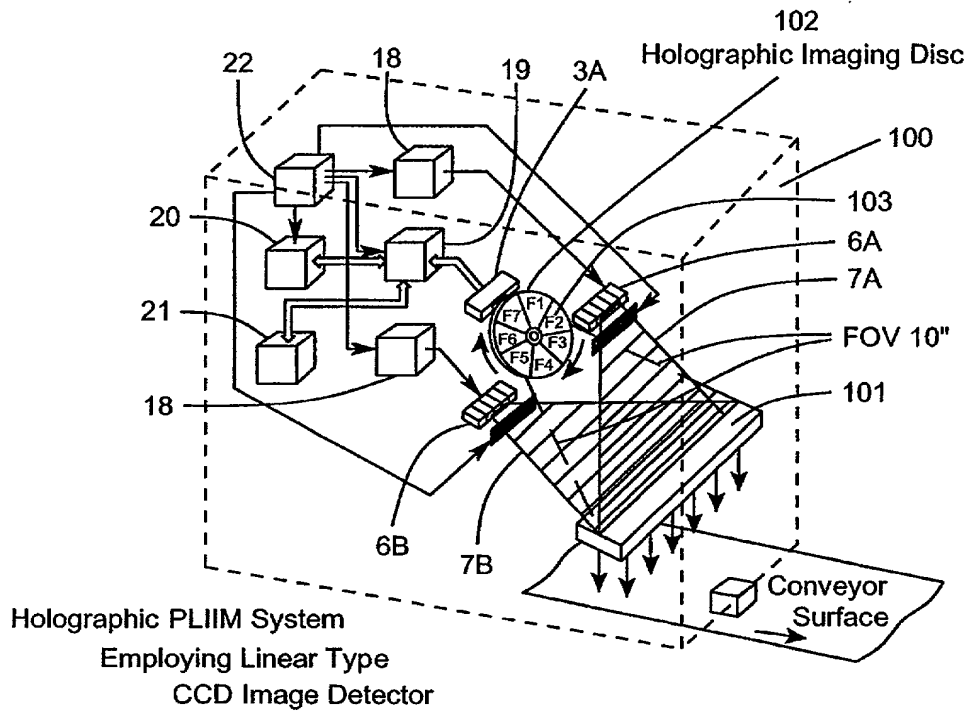


FIG. 7A

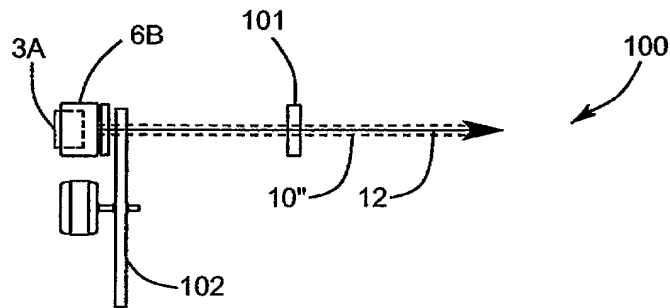


FIG. 7B



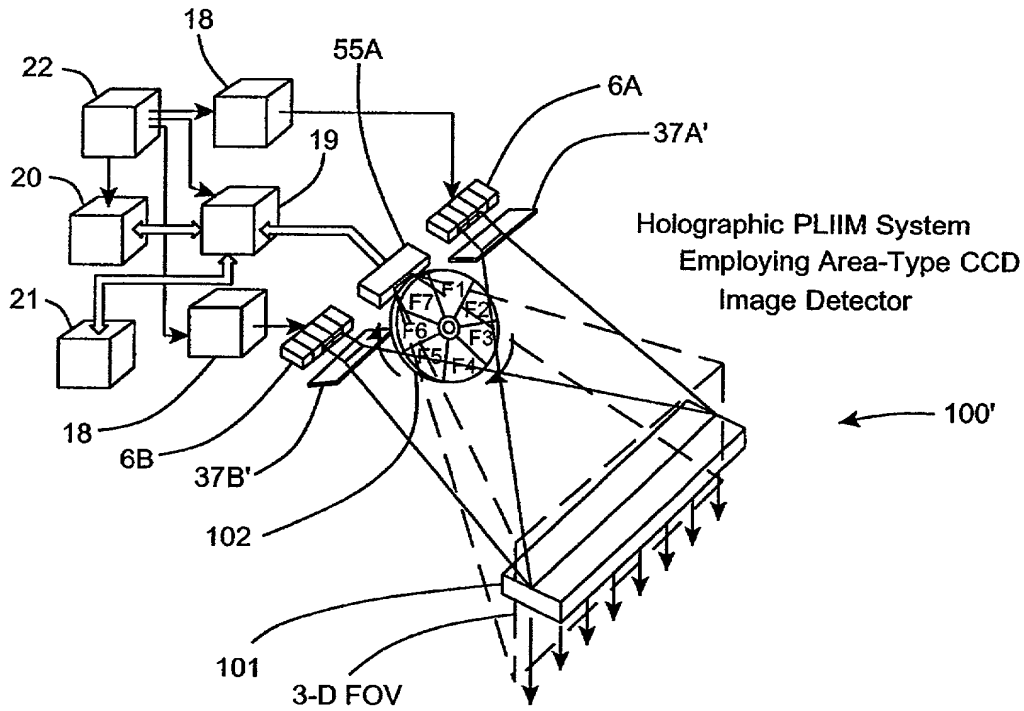


FIG. 8A

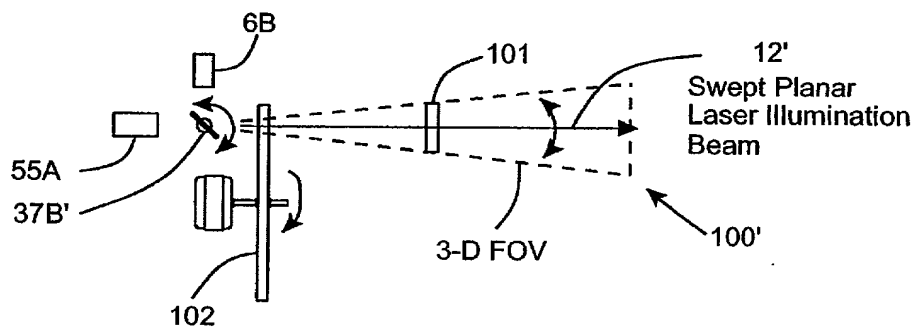


FIG. 8B



1-D Scanner Embodiment

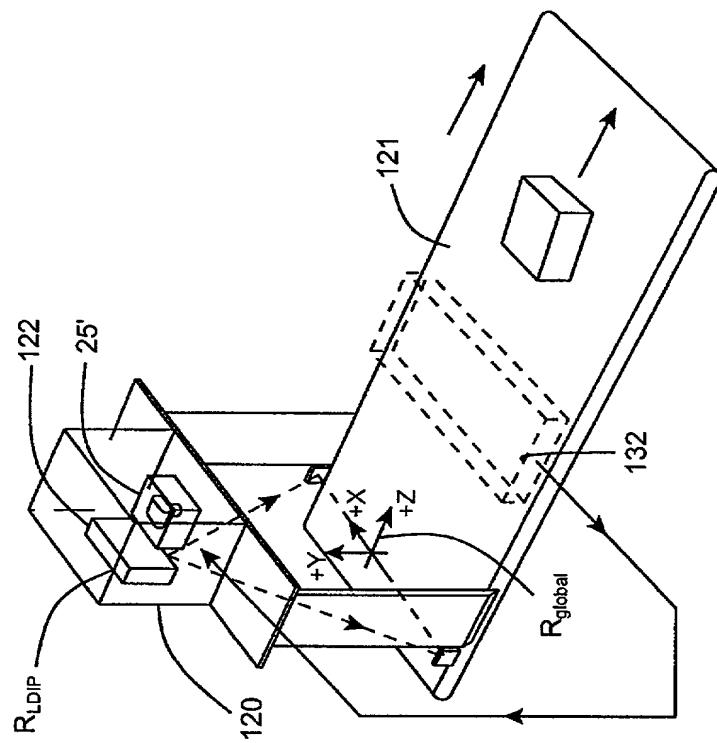
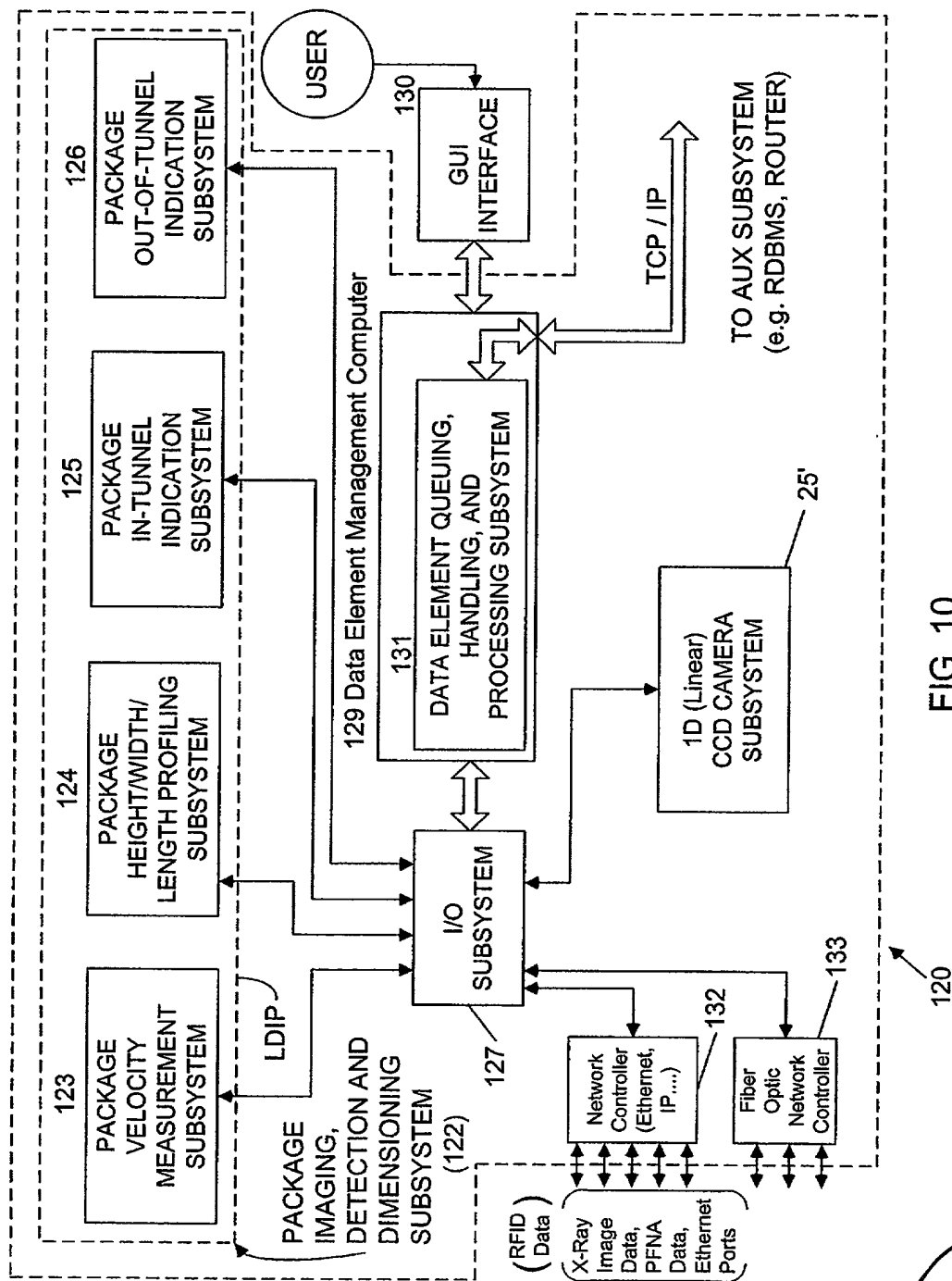


FIG. 9





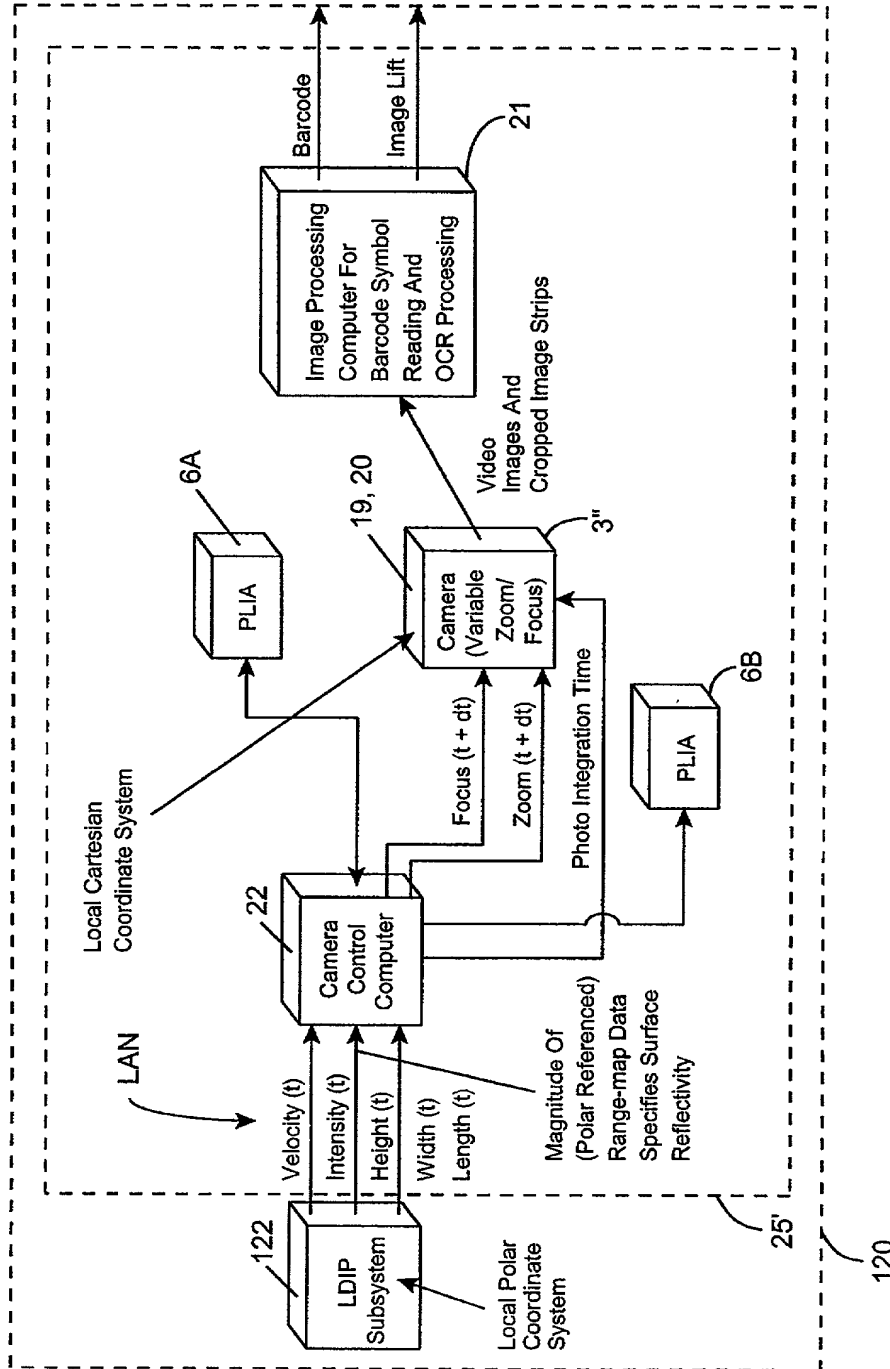


FIG. 11



20020704T29001

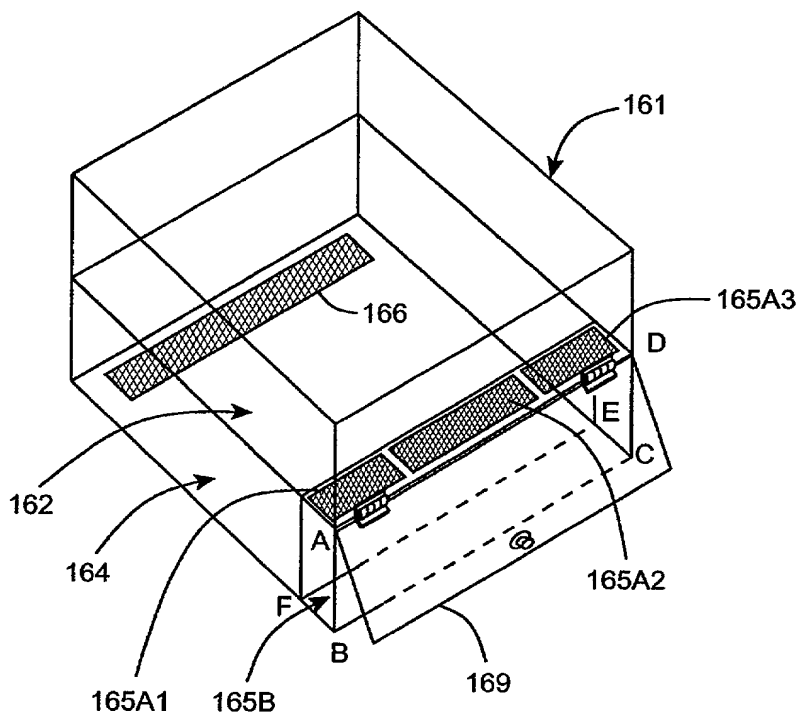
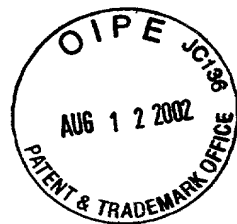


FIG. 12A



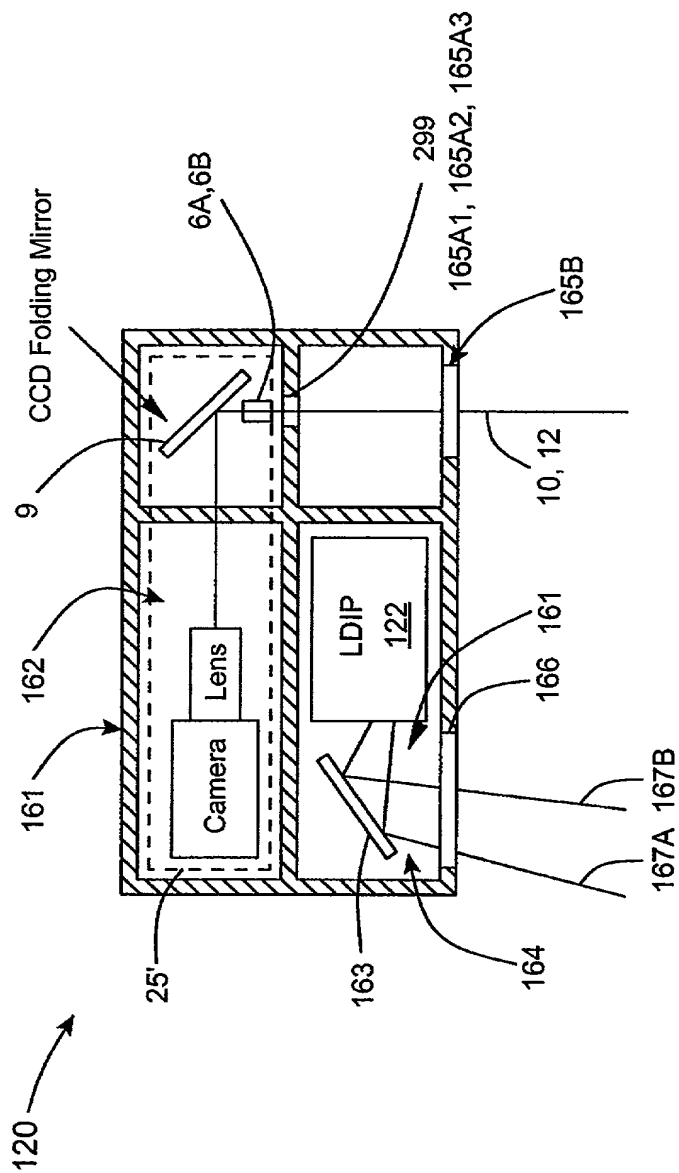


FIG. 12B



20020801 011723001

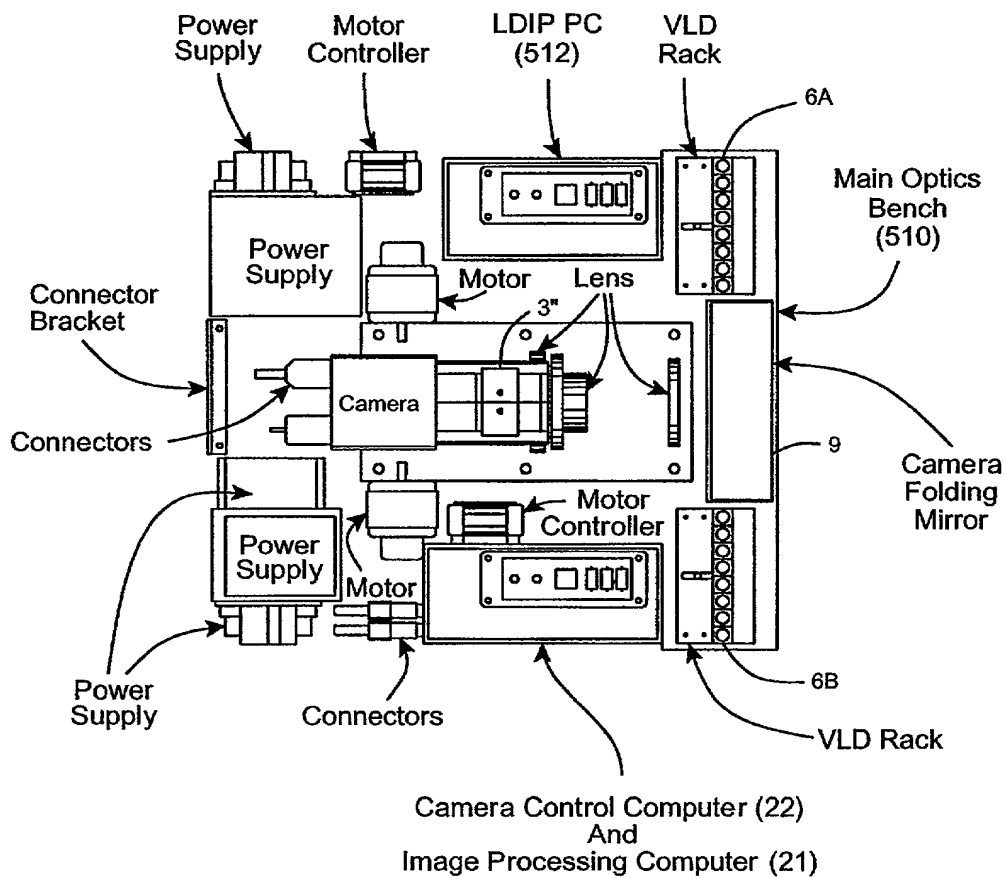


FIG. 12C



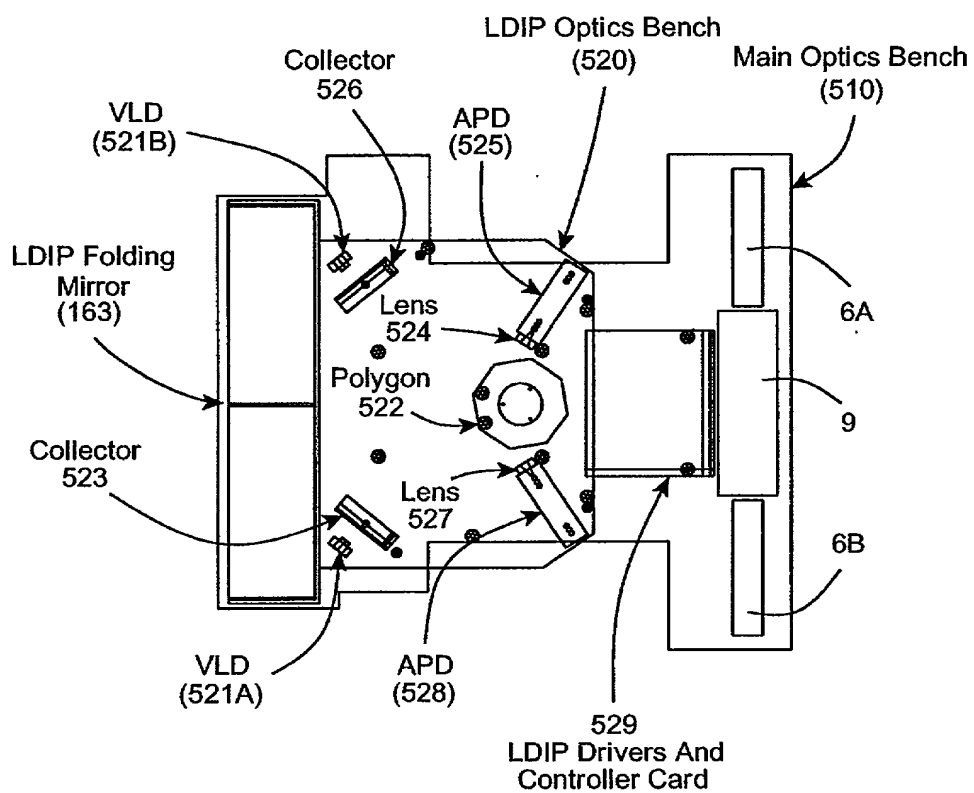
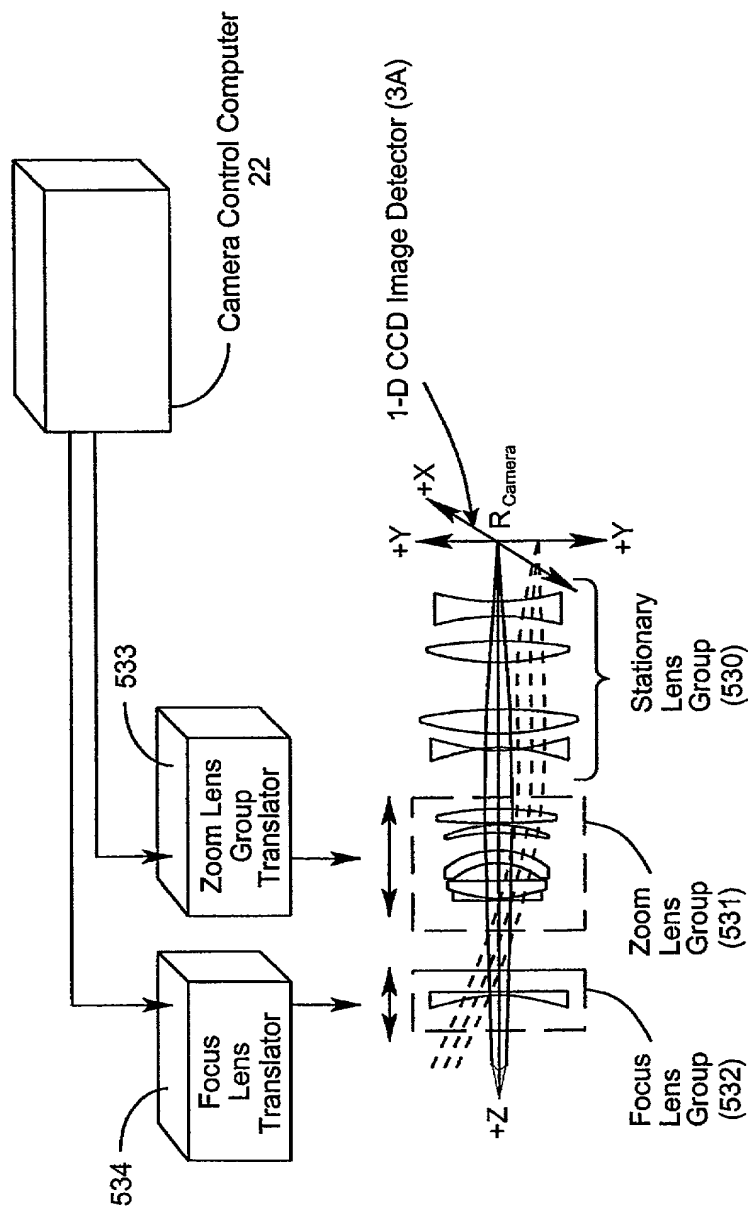


FIG. 12D





Main Optics Lens Groups

FIG. 12E



2002140-04129001

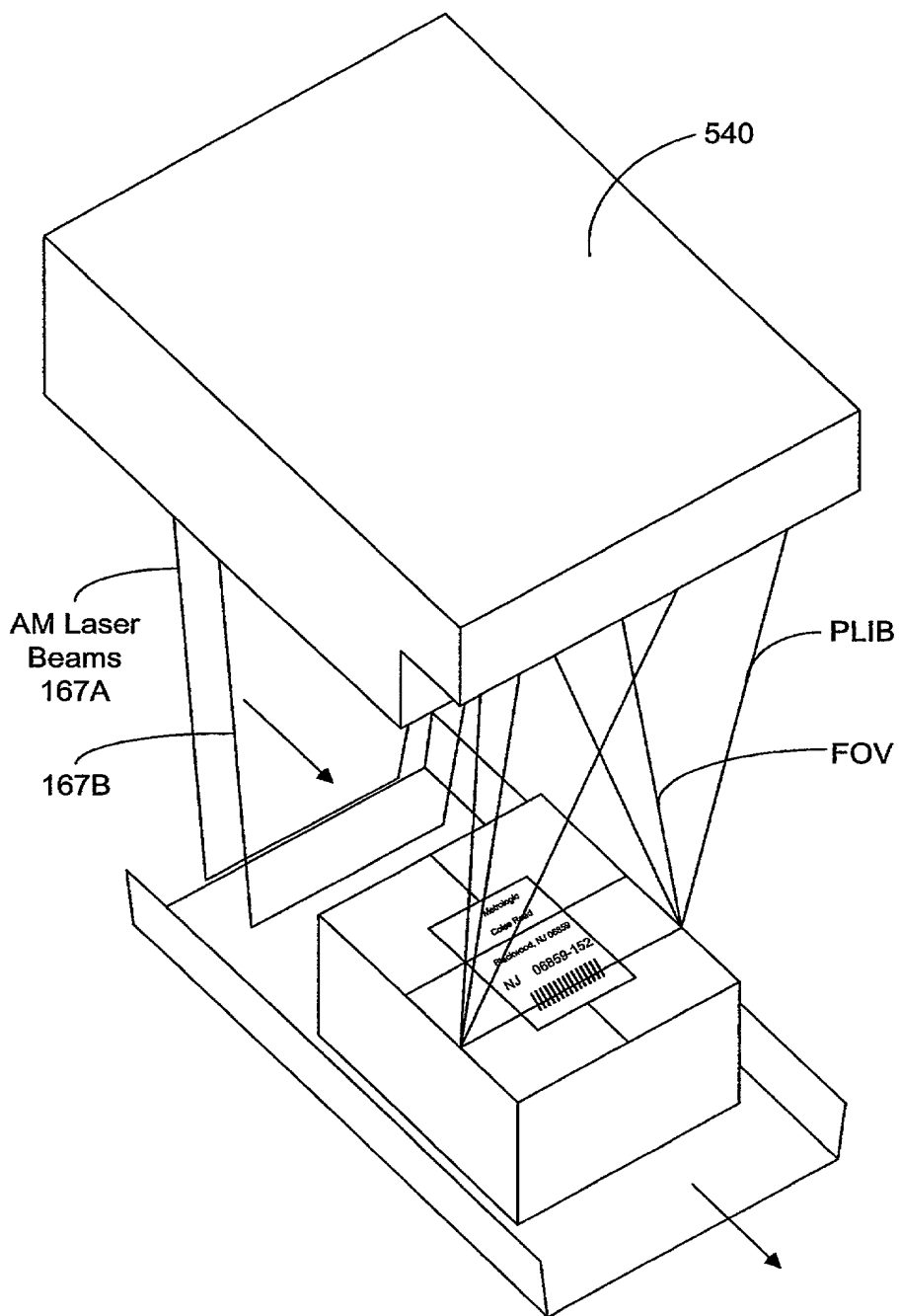


FIG. 13A



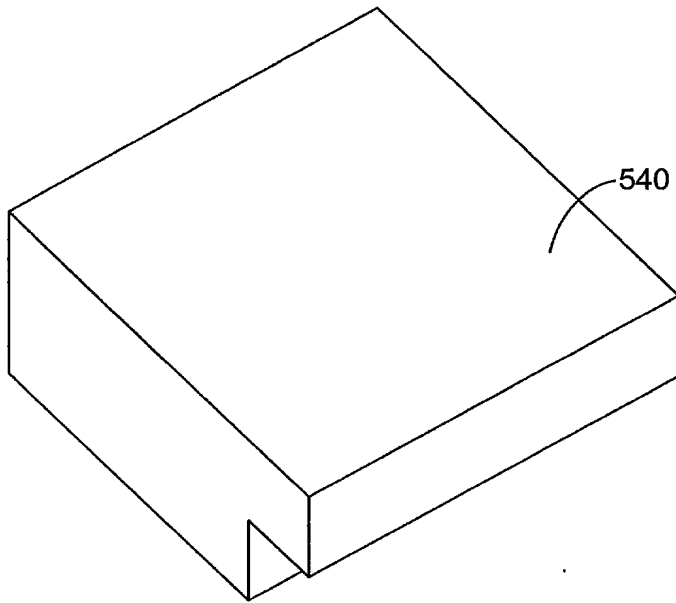


FIG. 13B

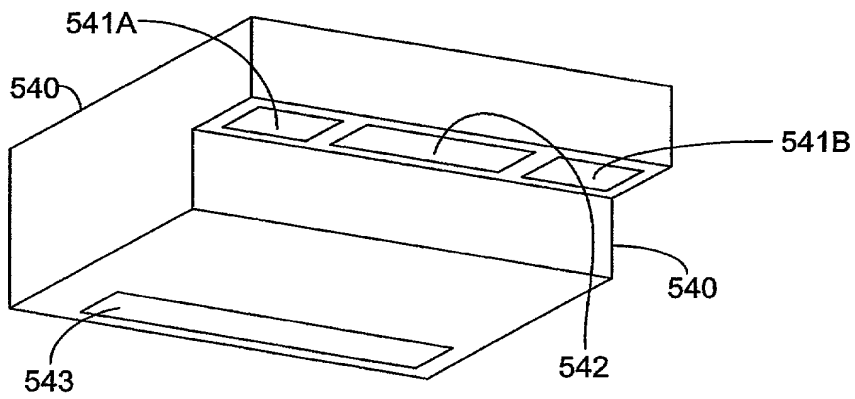


FIG. 13C



202100104123001

PLIIM-BASED PACKAGE IDENTIFICATION AND DIMENSIONING (PID) SYSTEM

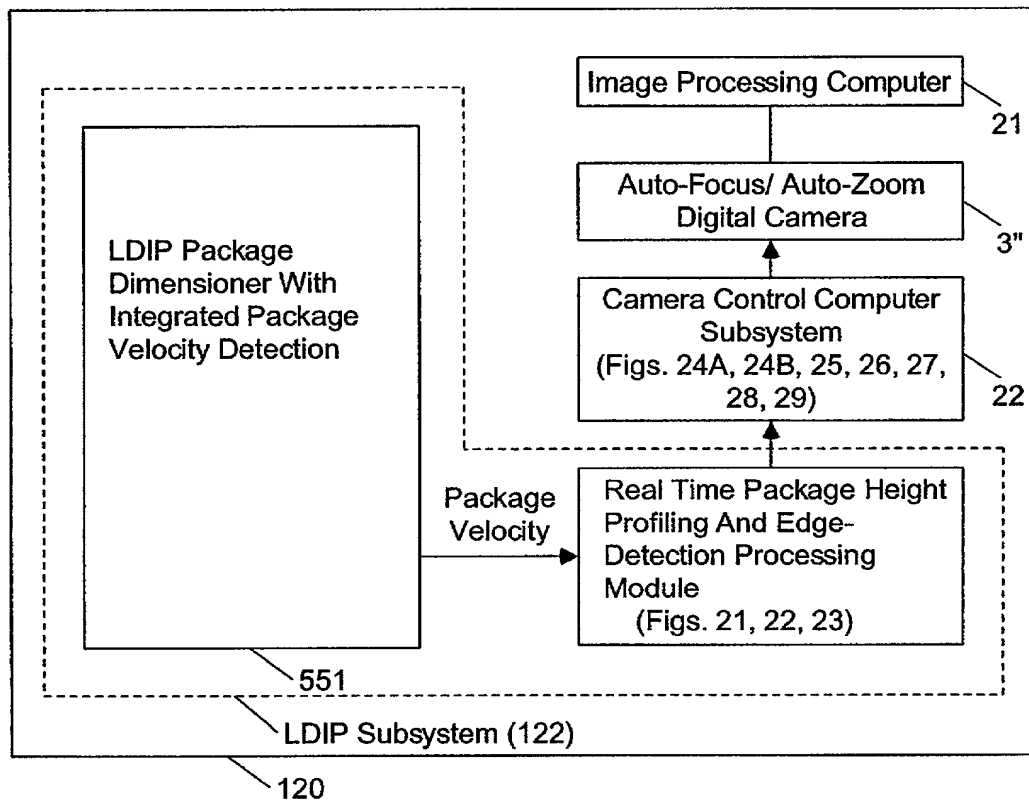


FIG. 14

LDIP REAL-TIME PACKAGE HEIGHT PROFILE AND EDGE DETECTION METHOD

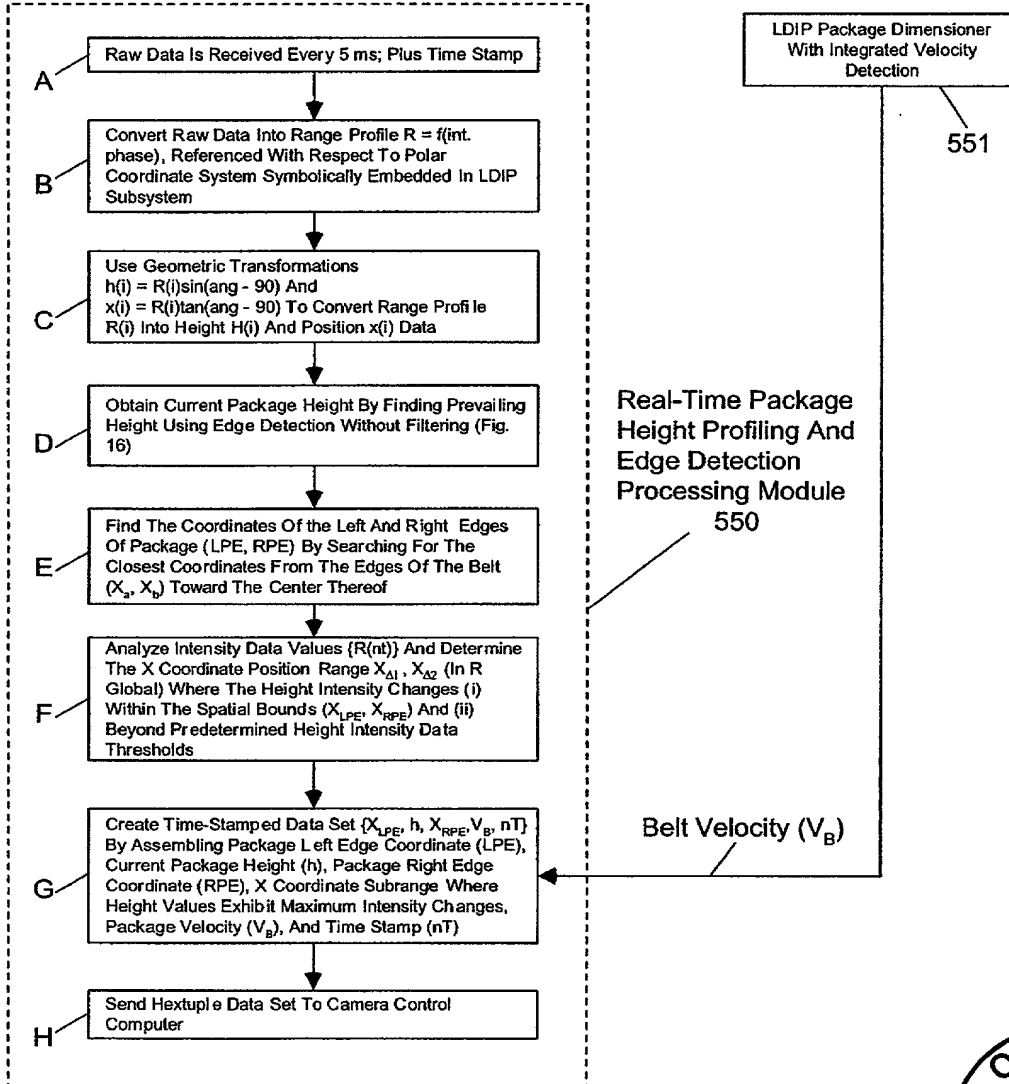


FIG. 15



LDIP REAL-TIME PACKAGE EDGE DETECTION

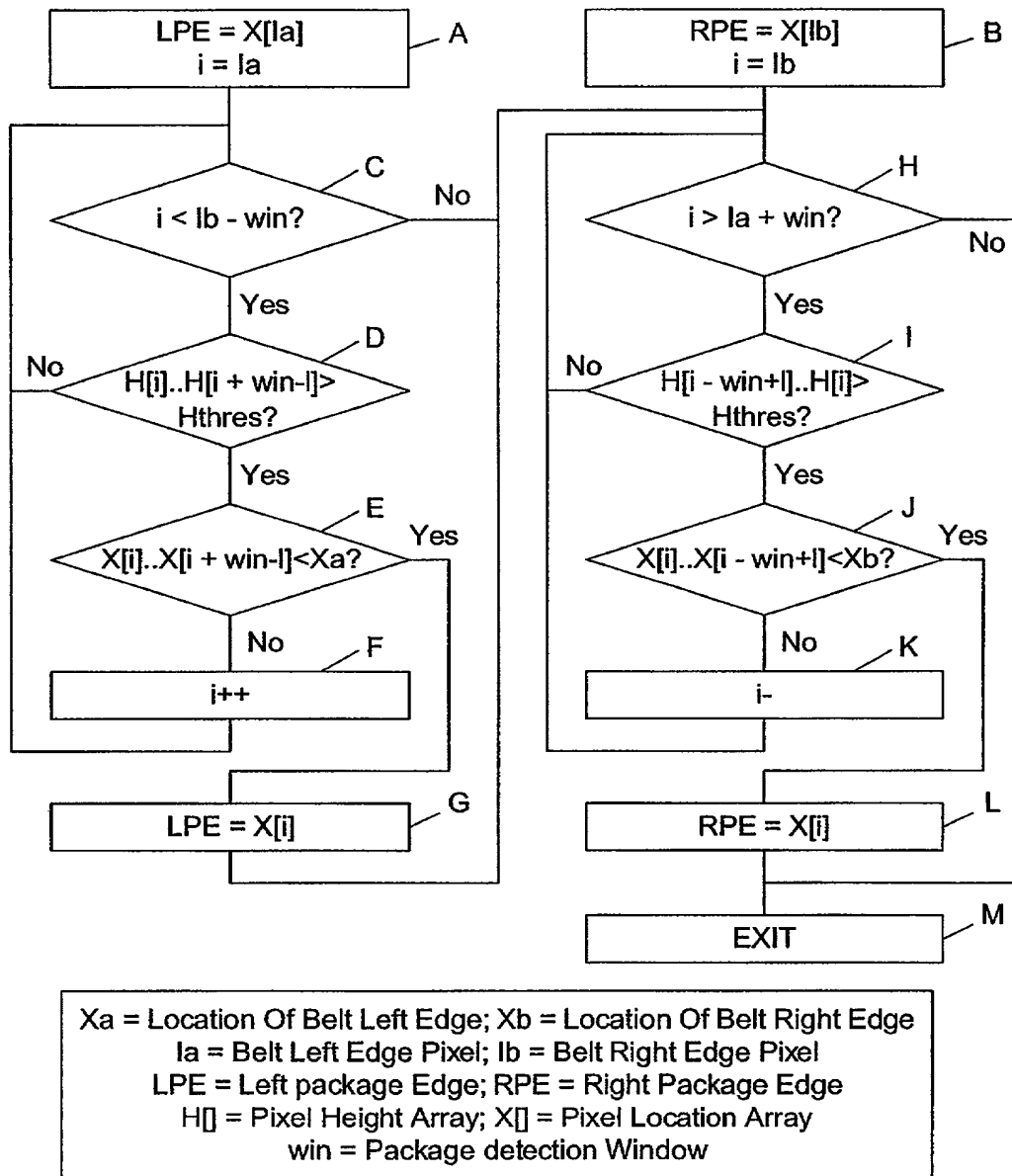


FIG. 16



20074022001

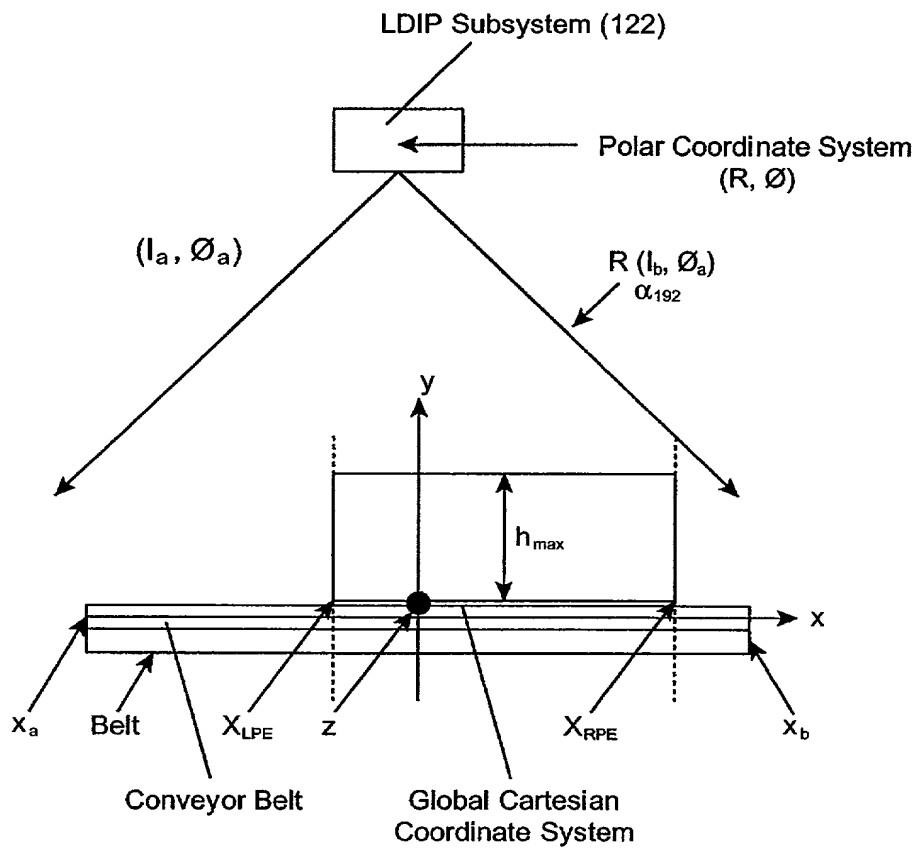


FIG. 17



CAMERA CONTROL PROCESS CARRIED OUT WITHIN THE CAMERA
CONTROL SUBSYSTEM OF EACH OBJECT IDENTIFICATION AND
ATTRIBUTE ACQUISITION SYSTEM OF PRESENT INVENTION

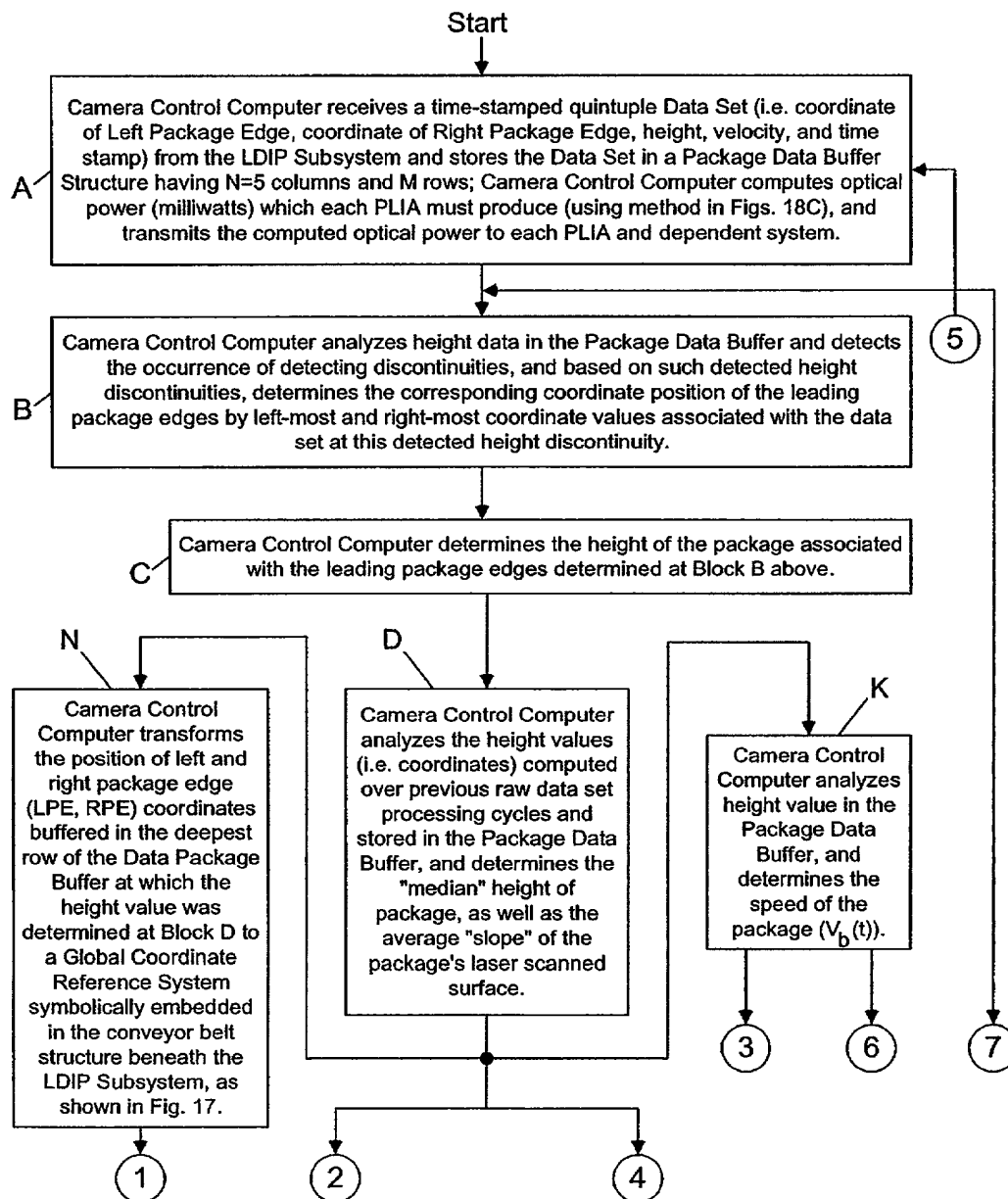


FIG. 18A



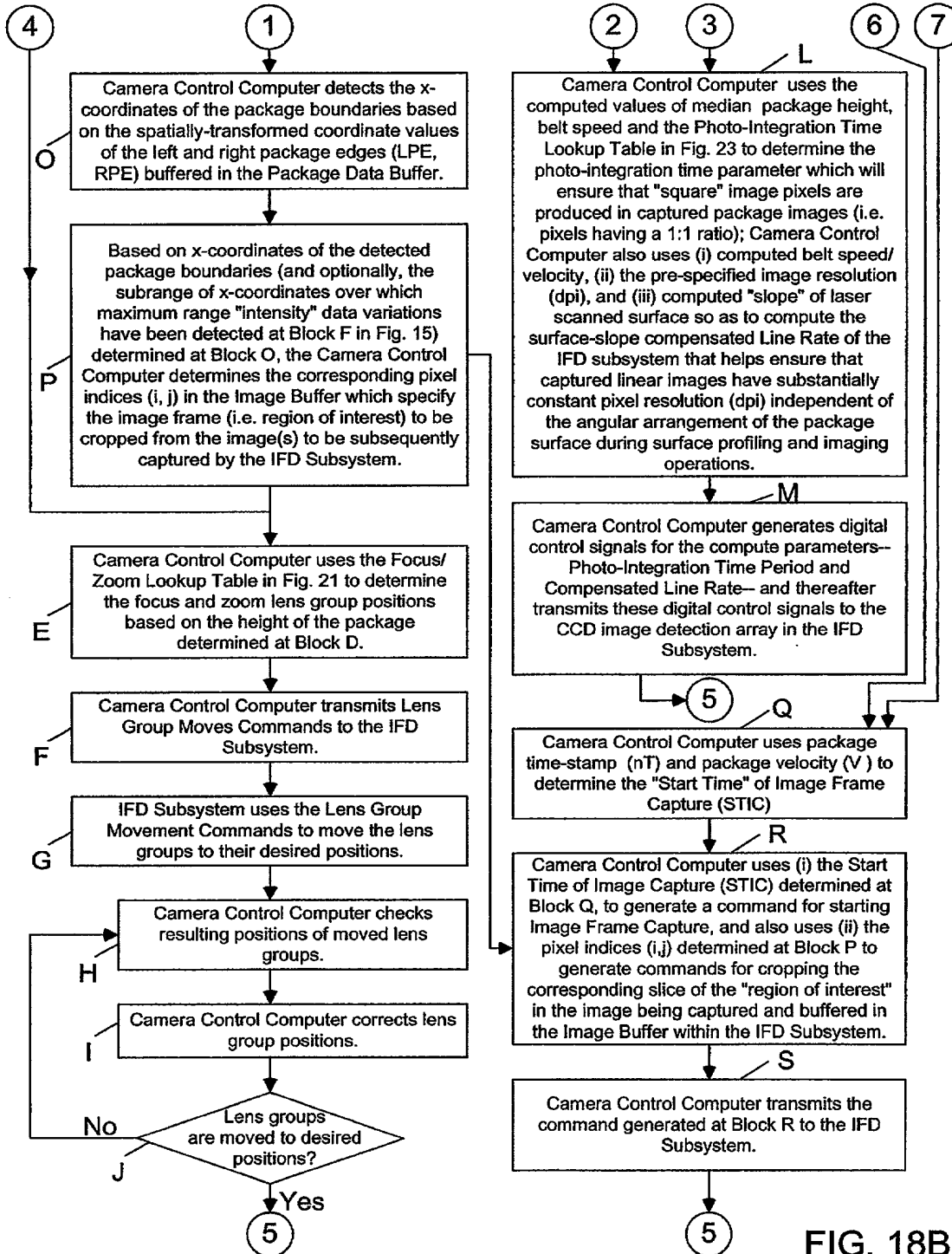
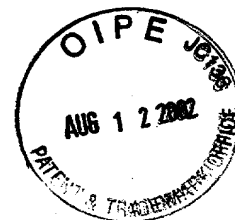


FIG. 18B



METHOD OF COMPUTING OPTICAL OUTPUT POWER FROM LASER
DIODES IN A PLANAR LASER ILLUMINATION ARRAY (PLIA) FOR
CONTROLLING THE CONSTANT WHITE-LEVEL IN IMAGE PIXELS
CAPTURED BY A PLIIM-BASED LINEAR IMAGER

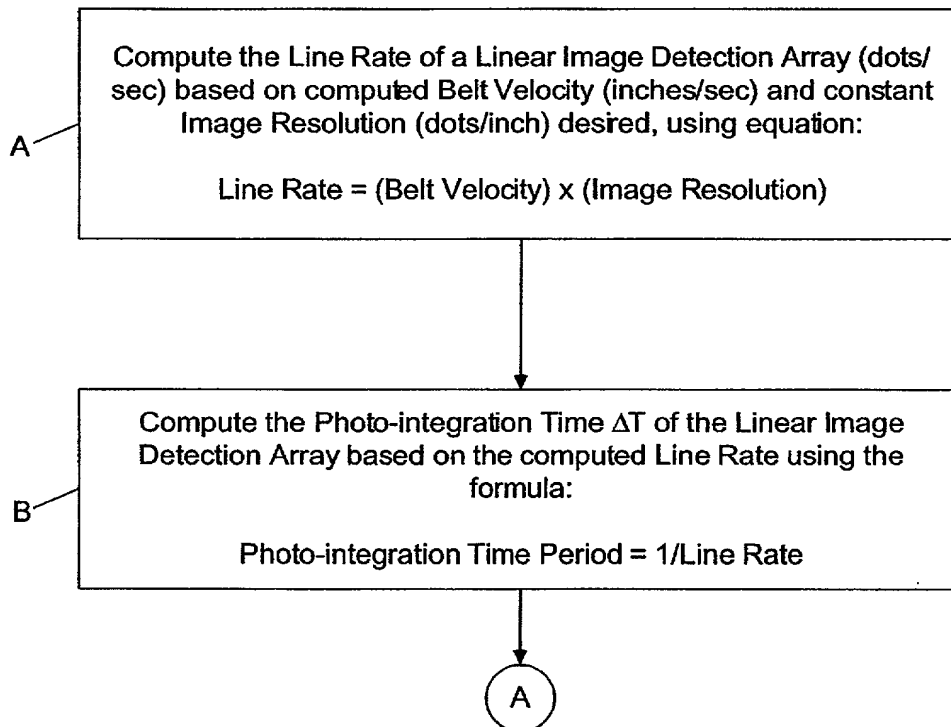


FIG. 18C1



A



Compute the Optical Power (milliwatts) of each PLIA based on the computed Photo-integration Time Period (ΔT) using the following formula:

$$\text{Optical Power of VLD (milliwatts)} = \frac{\text{constant}}{\text{Photo-integration Time Period } \Delta T}$$

FIG. 18C2



REPORT

Left Package Edge (LPE)	Package Height (h)	Right Package Edge (RPE)	Package Velocity	Time-Stamp (nT)	
					Row 1
					Row 2
					Row 3
					Row 4
					Row 5
					Row M

FIG. 19

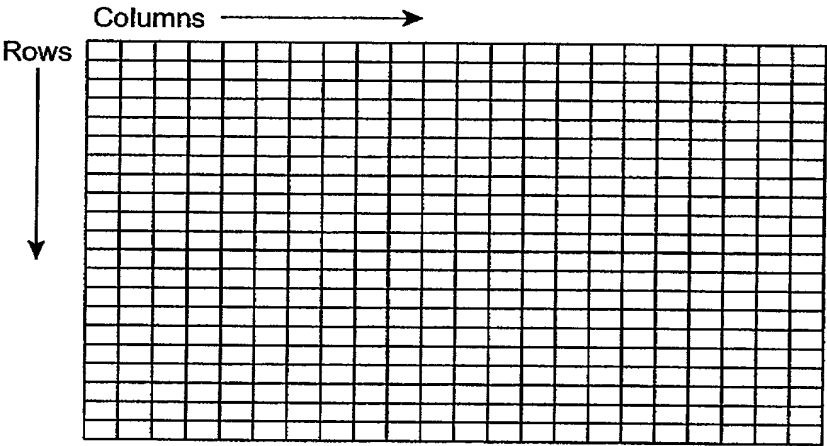


FIG. 20



Zoom And Focus Lens Group Position
Look-Up Table

Distance From Camera H (mm)	Zoom Group Distance (mm) Y (Zoom)	Focus Group Distance (mm) Y (Focus)
1000	21.57489228	2.47E-05
1100	19.38089696	10.99009783
1200	17.10673434	20.65783177
1300	14.77137314	29.10917002
1400	12.39153565	36.47312595
1500	9.979114358	42.87845436
1600	7.540639114	48.44003358
1700	5.078794775	53.25495831
1800	2.595989366	57.40834303
1900	0.099972739	60.98883615
(Use Interpolation Techniques For Working Distances Between Listed Points In Table)		



FIG. 21

* Note: The focal distance and zoom (eff. focal length) of camera lens are coupled (inter-dependant) in this commercial embodiment.

Camera Has A Fixed Aperture F56

Focus And Zoom Lens Movement vs. Working Distances

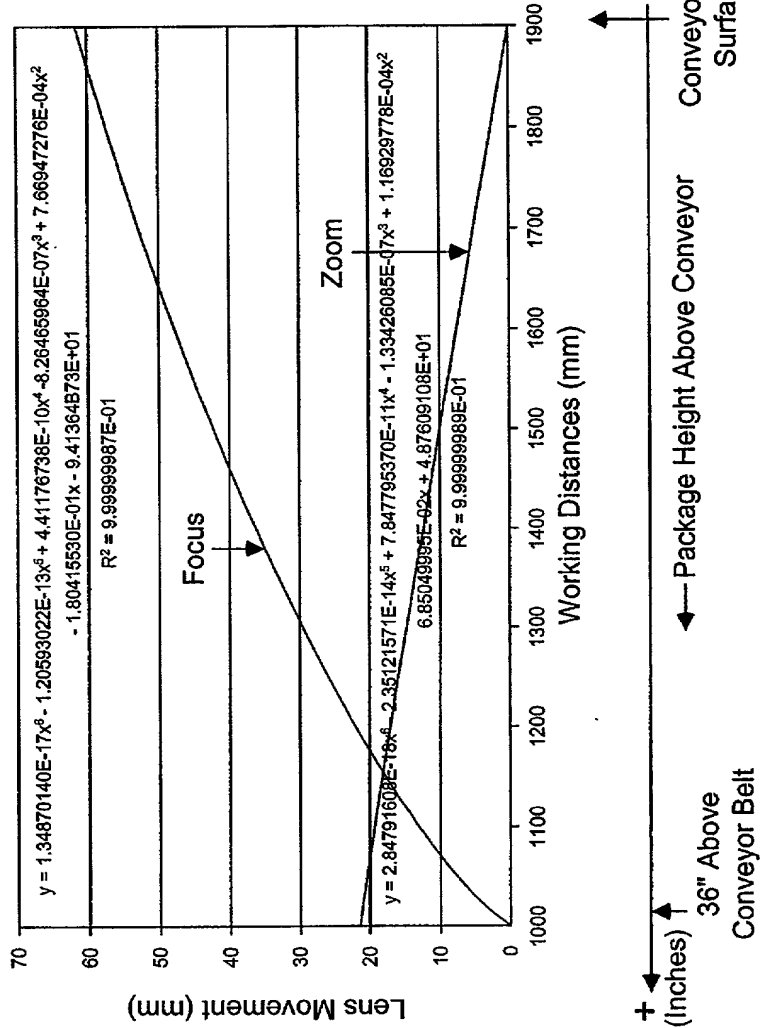


FIG. 22



Photo-Integration Time Look-Up Table

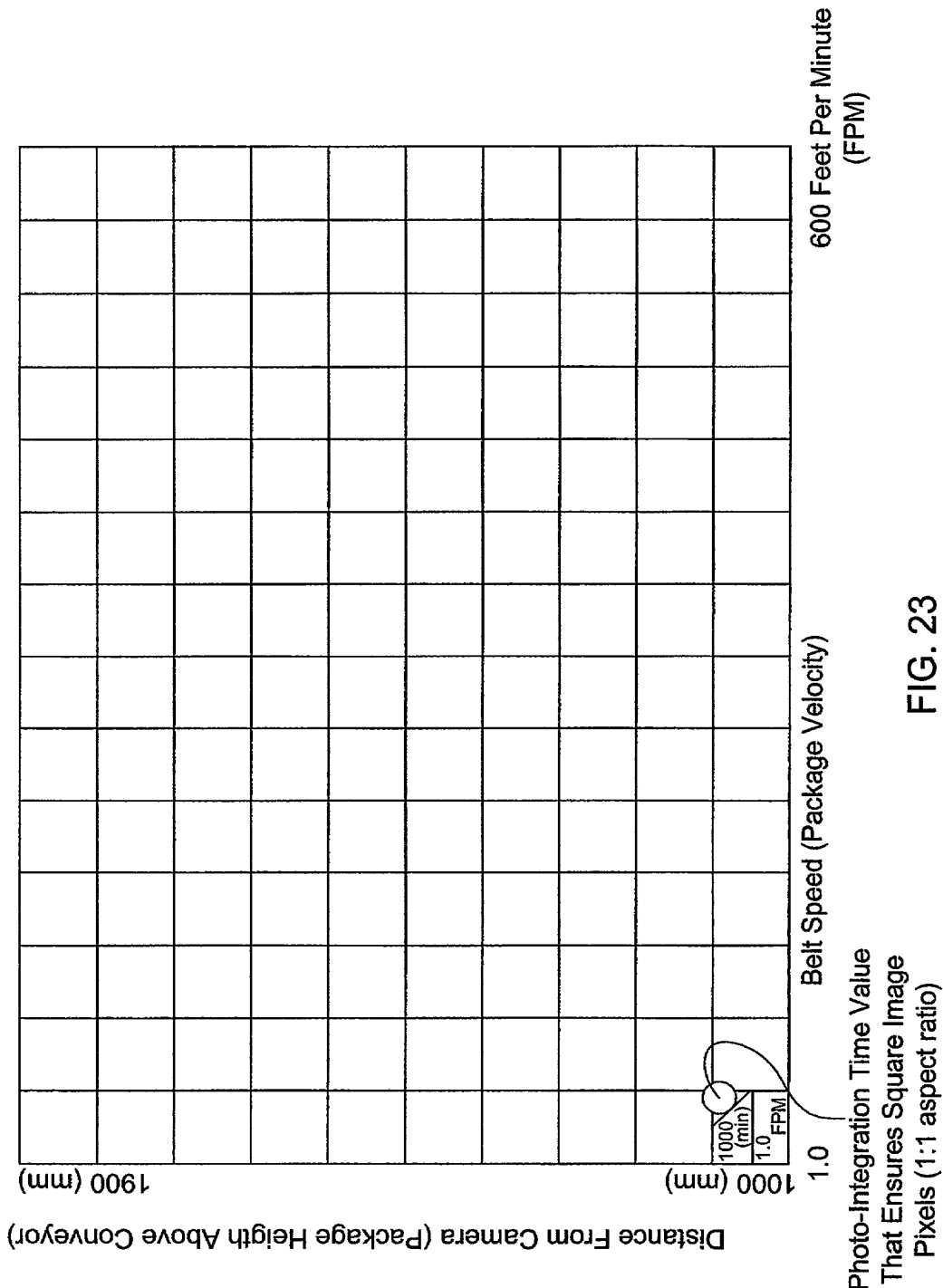
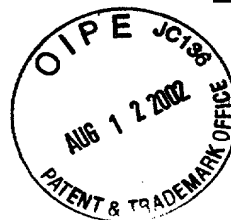


FIG. 23



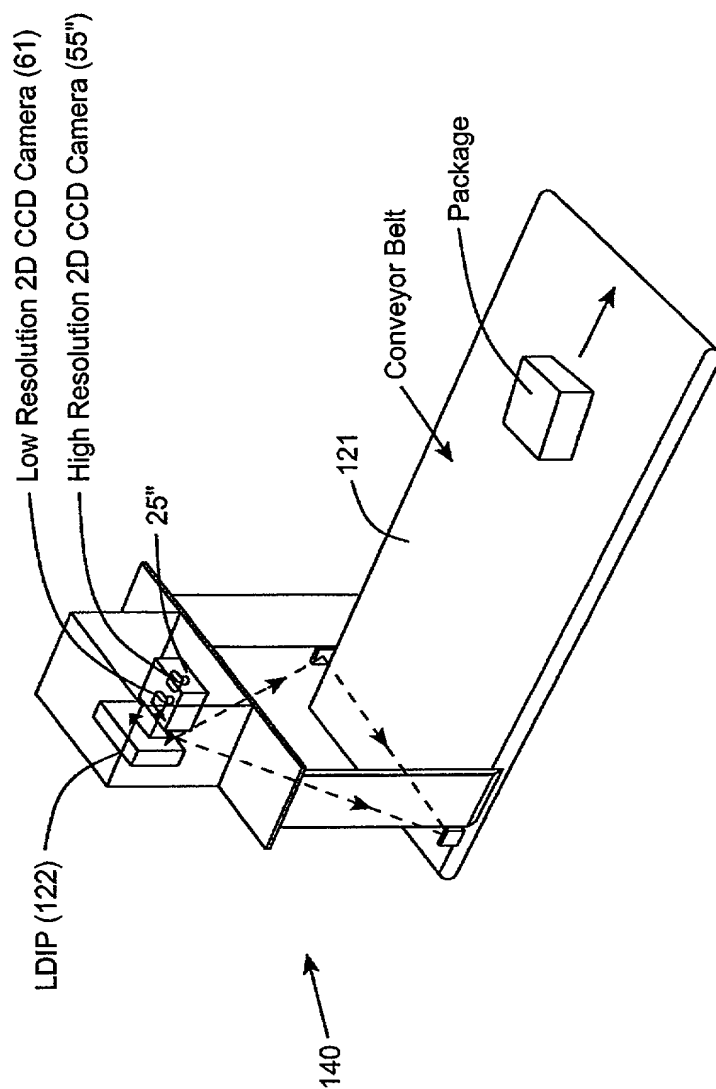
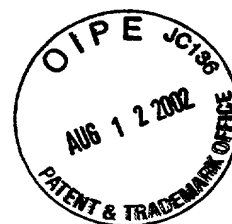


FIG. 24



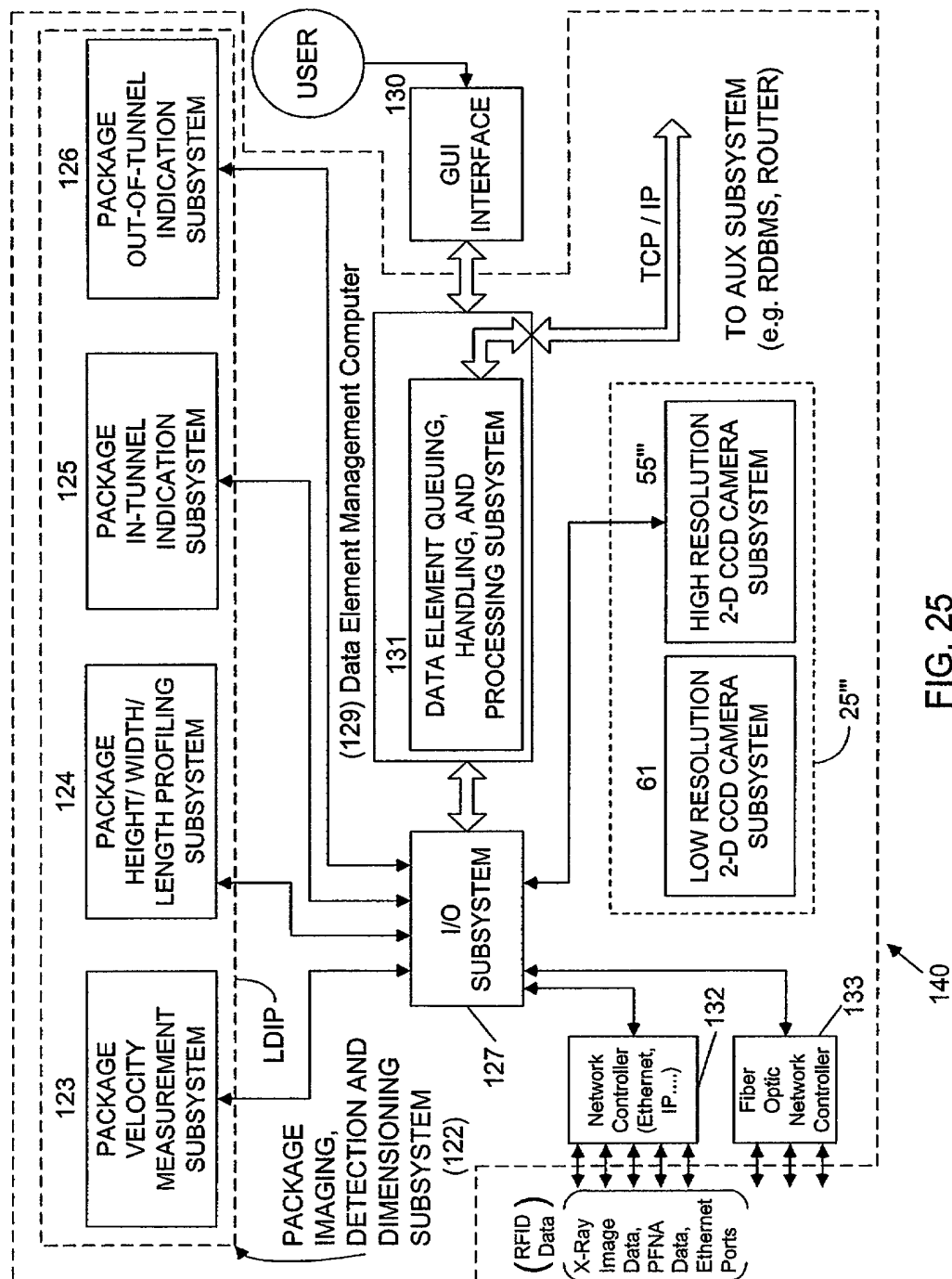


FIG. 25



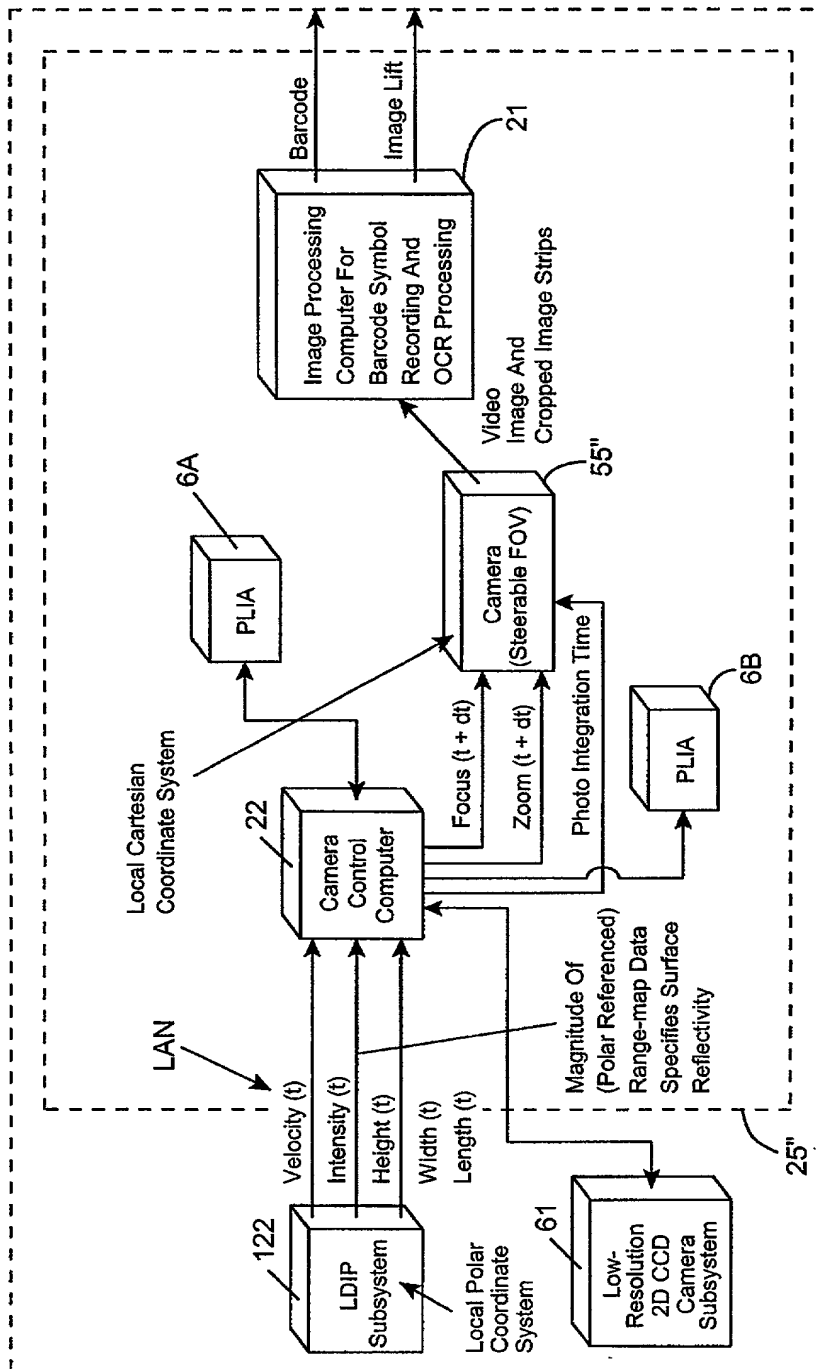


FIG. 26



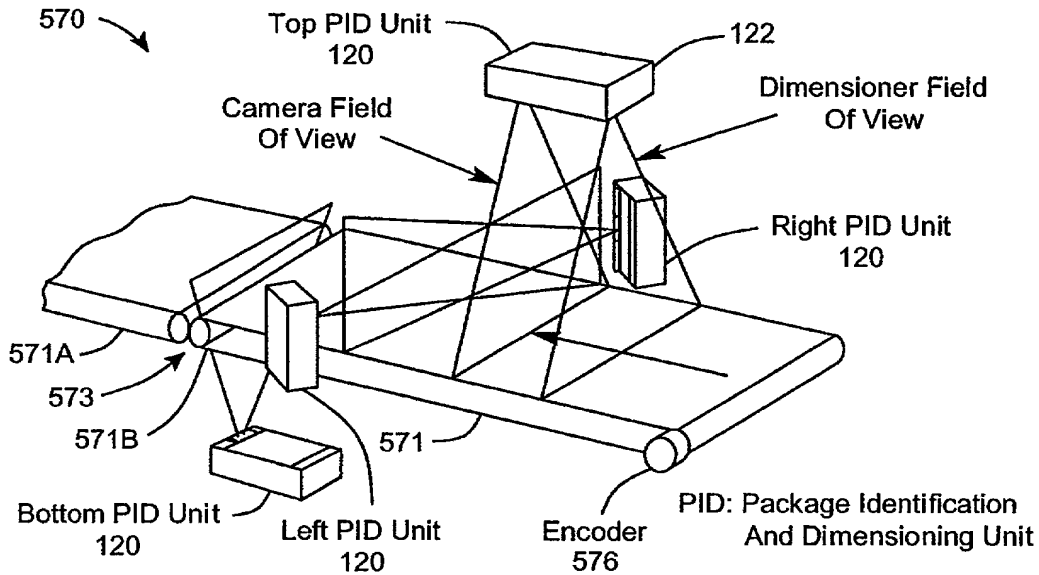


FIG. 27

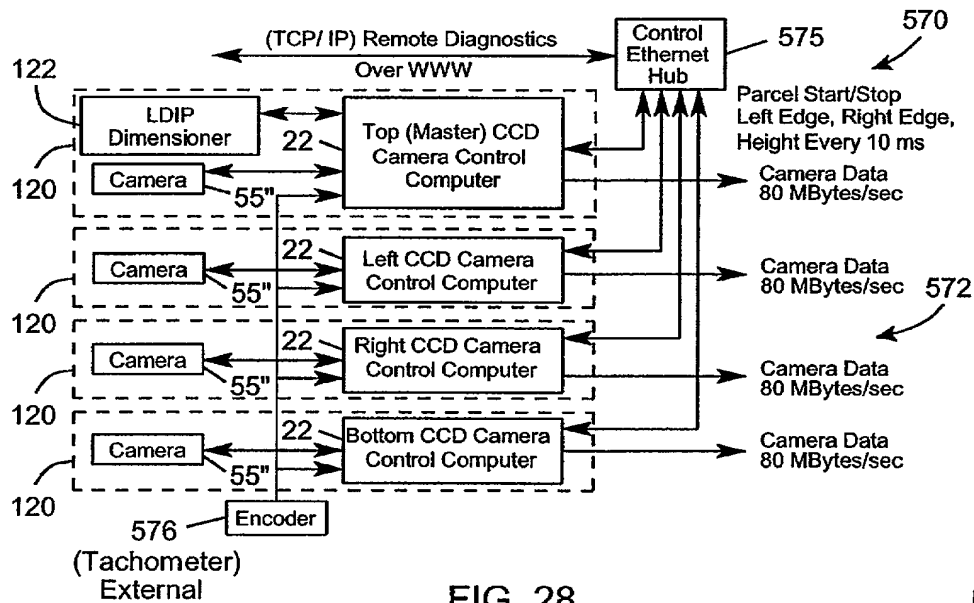
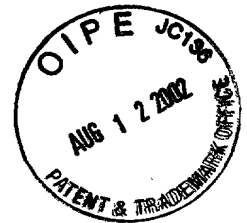


FIG. 28



20230704T23001

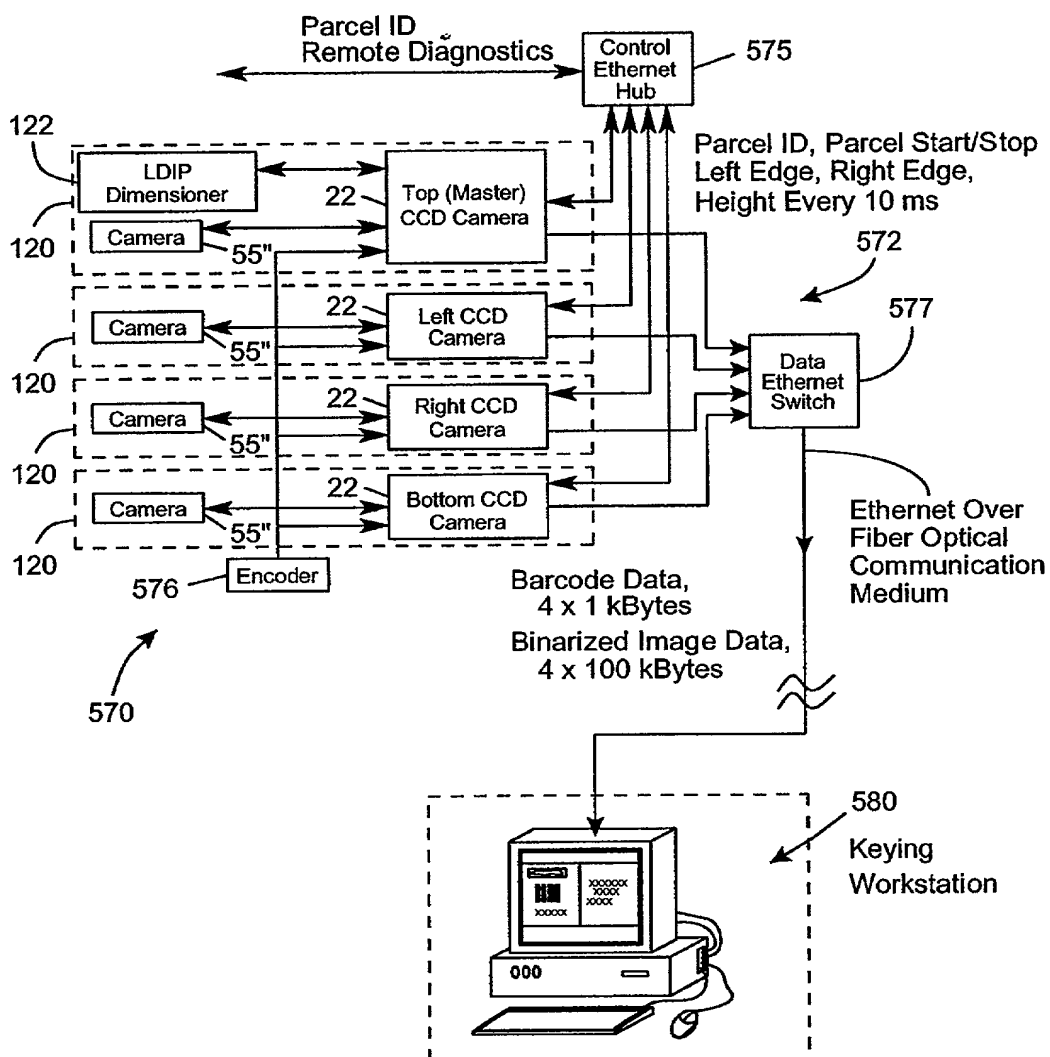


FIG. 29





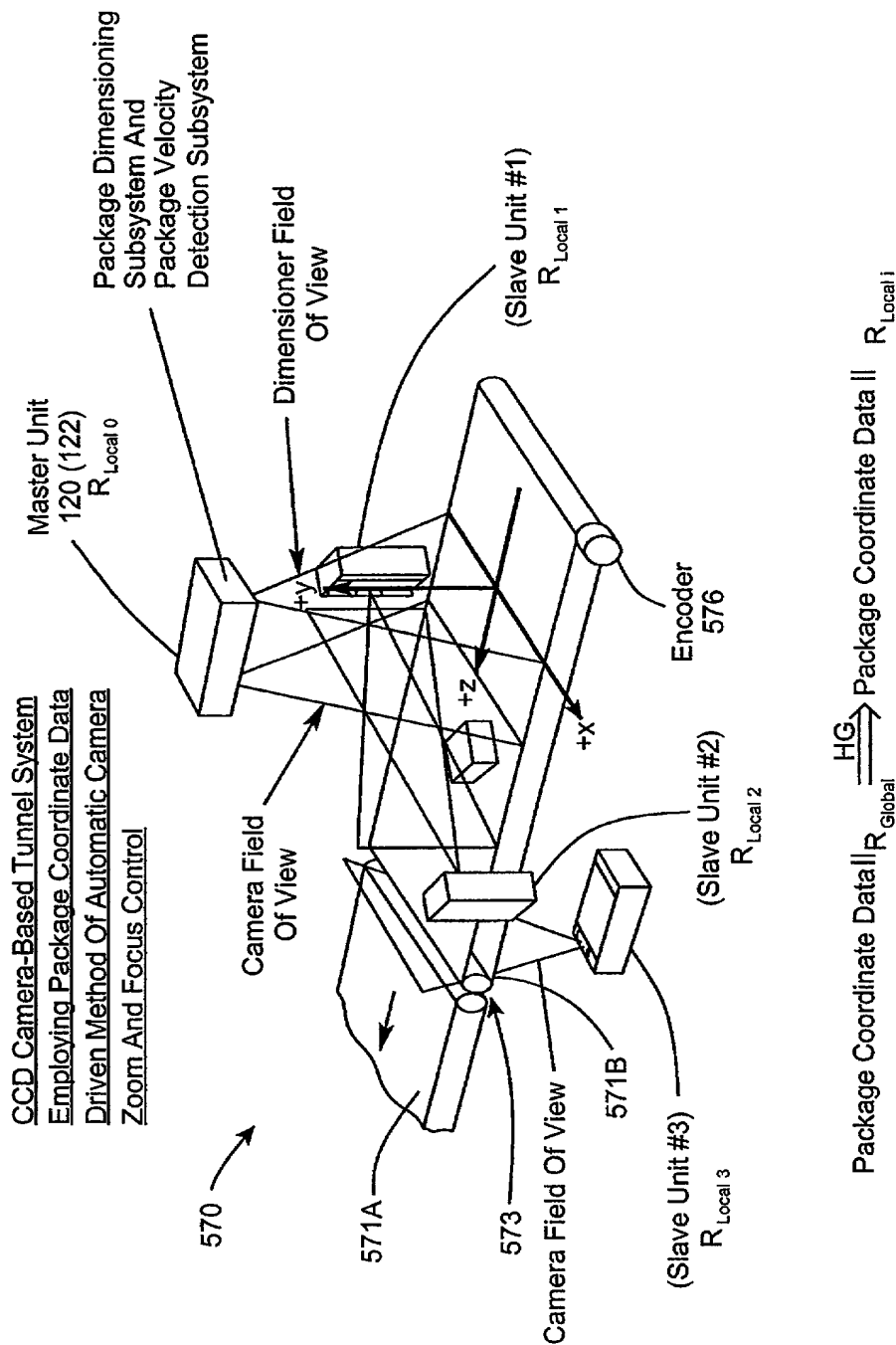


FIG. 31



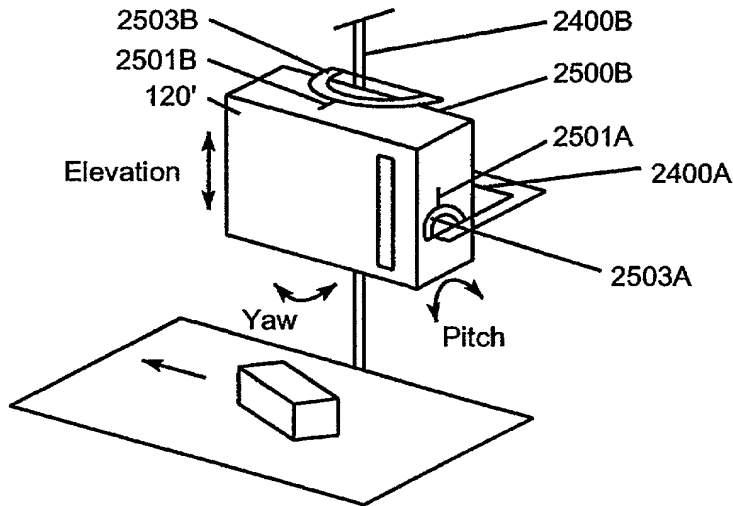


FIG. 31A

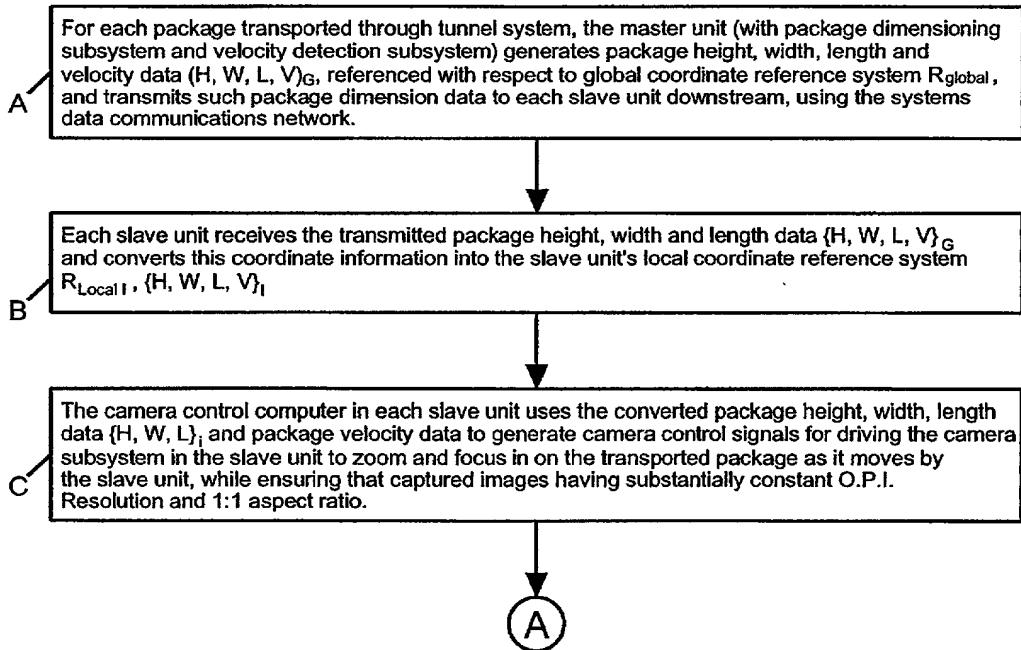


FIG. 32A



2006740 081202

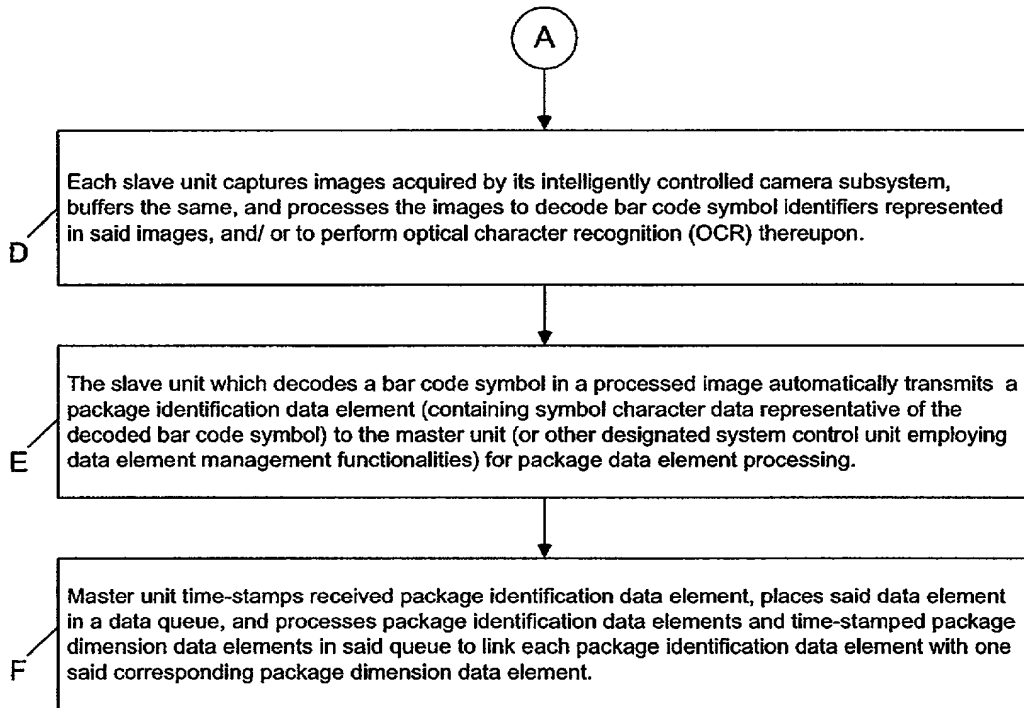
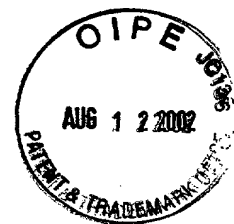
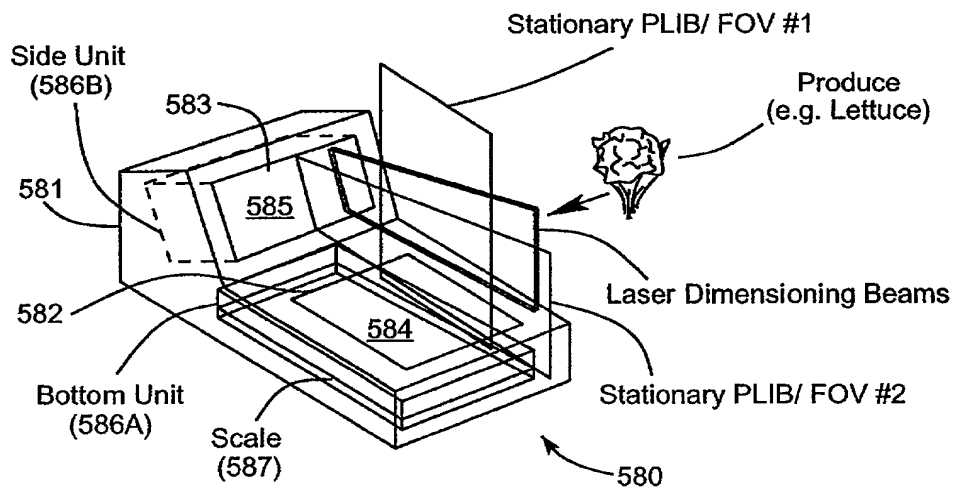
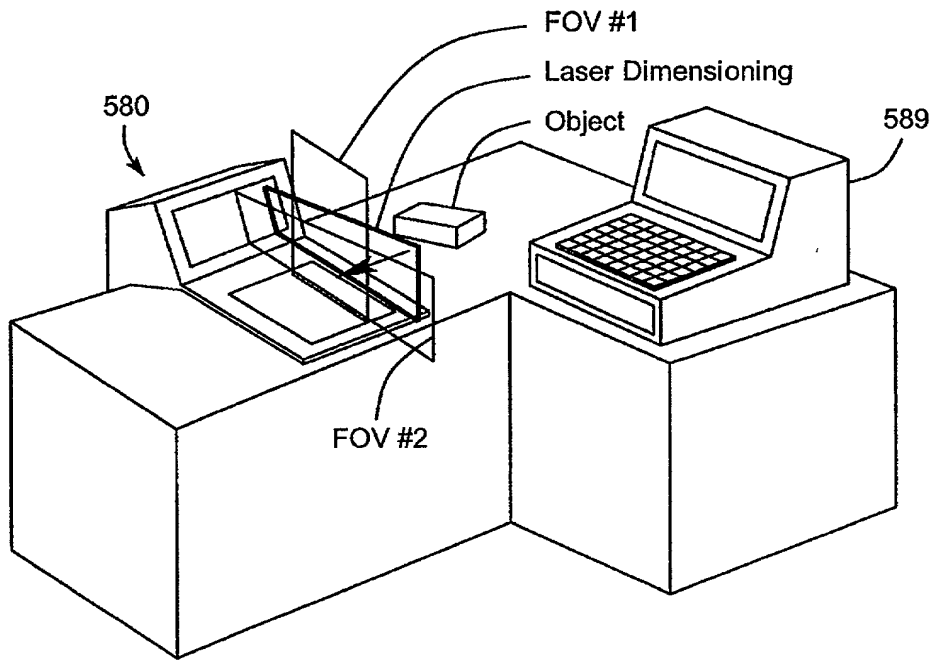


FIG. 32B





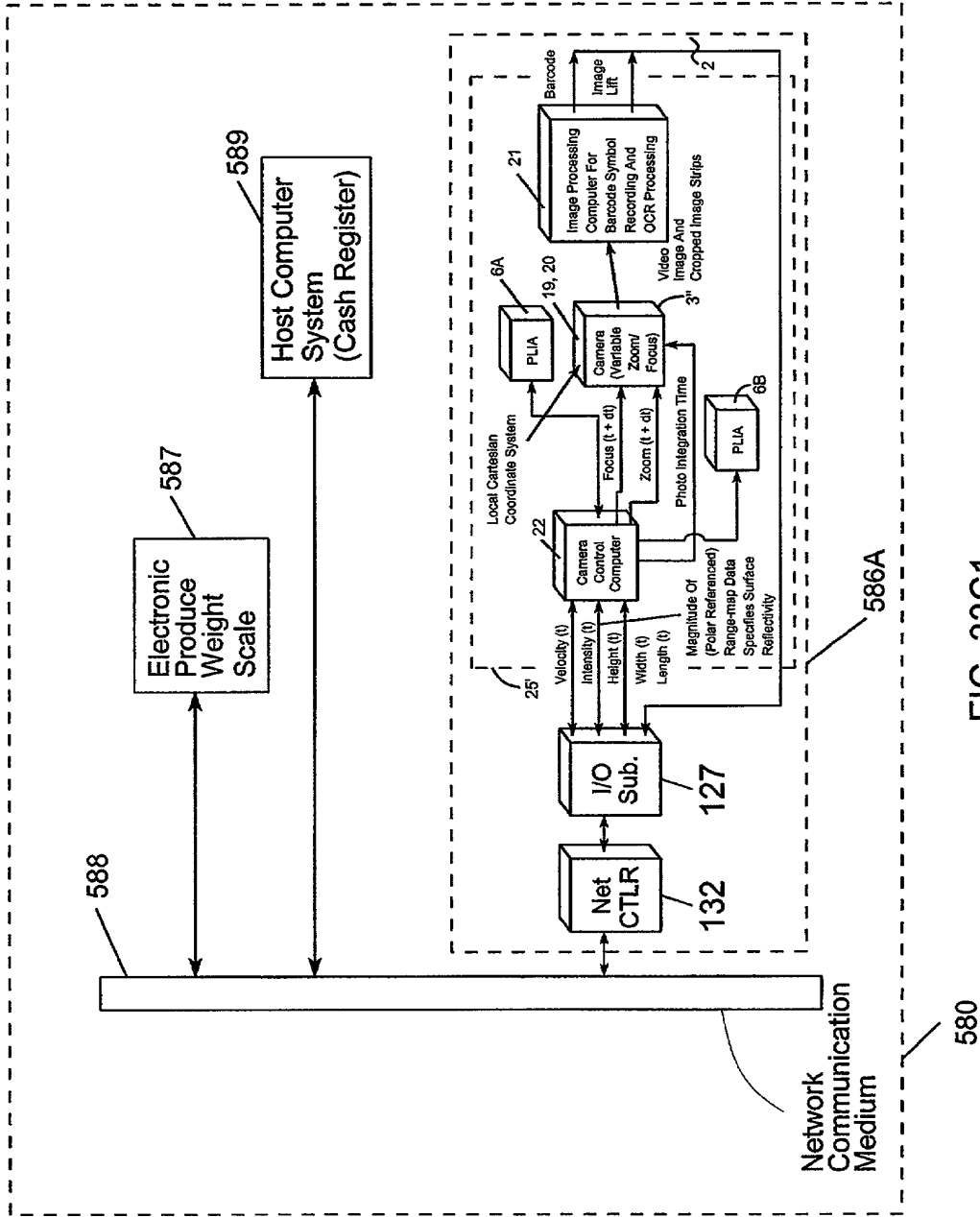


FIG. 33C1



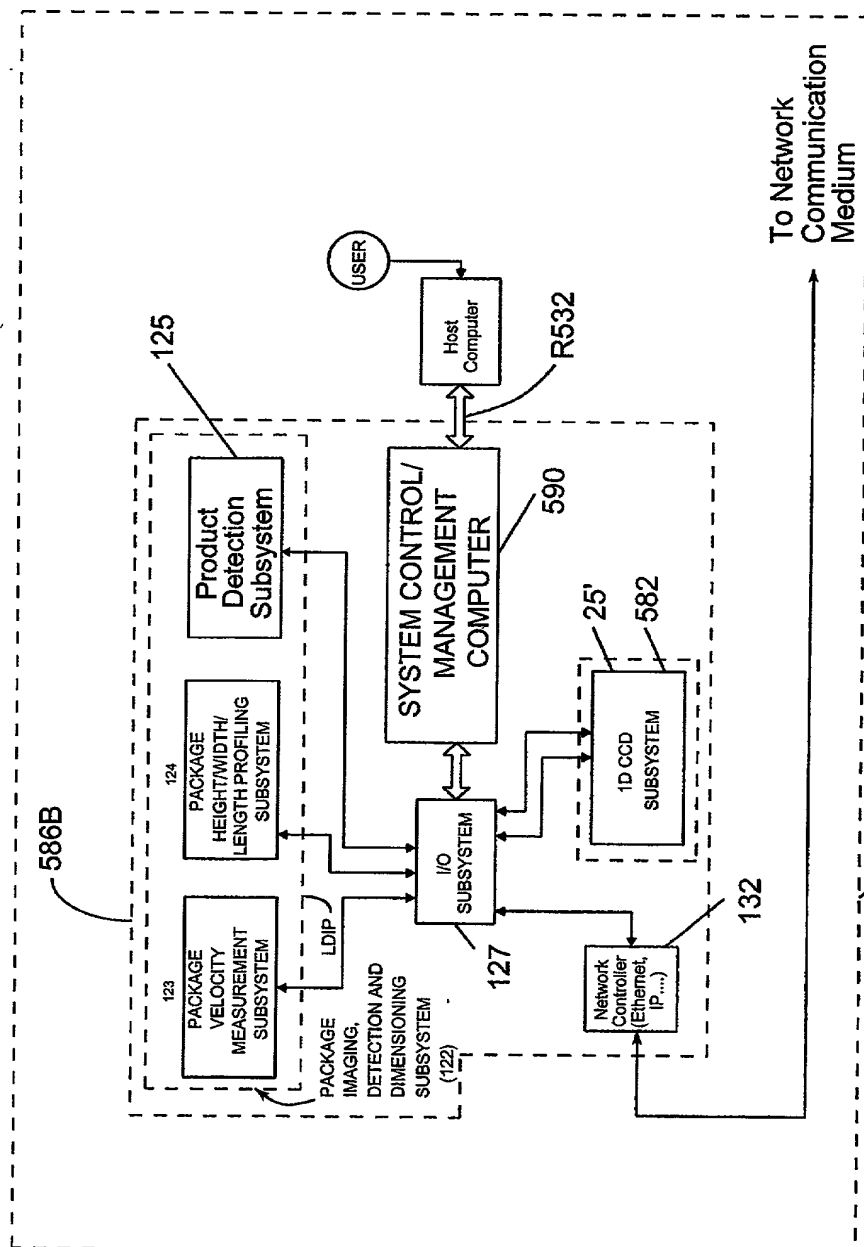


FIG. 33C2



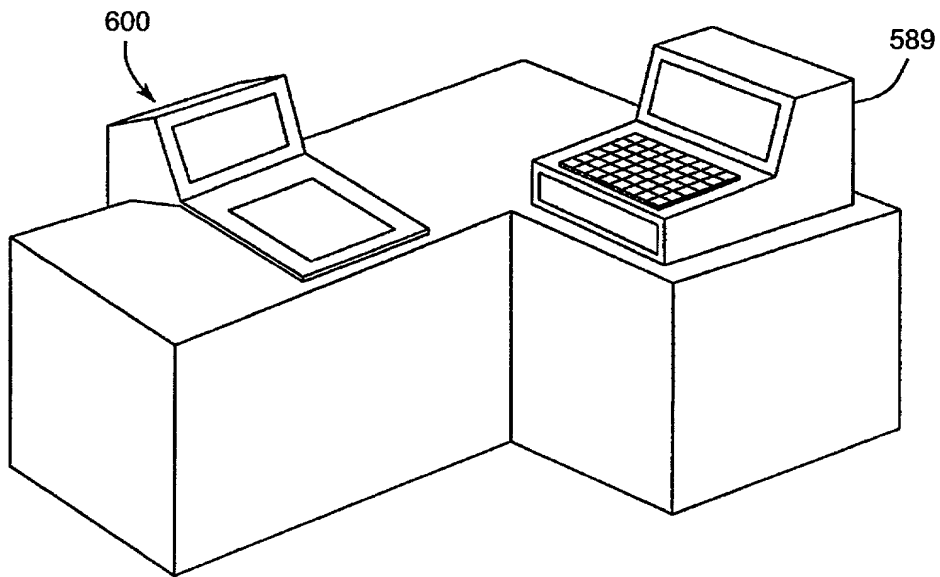


FIG. 34A

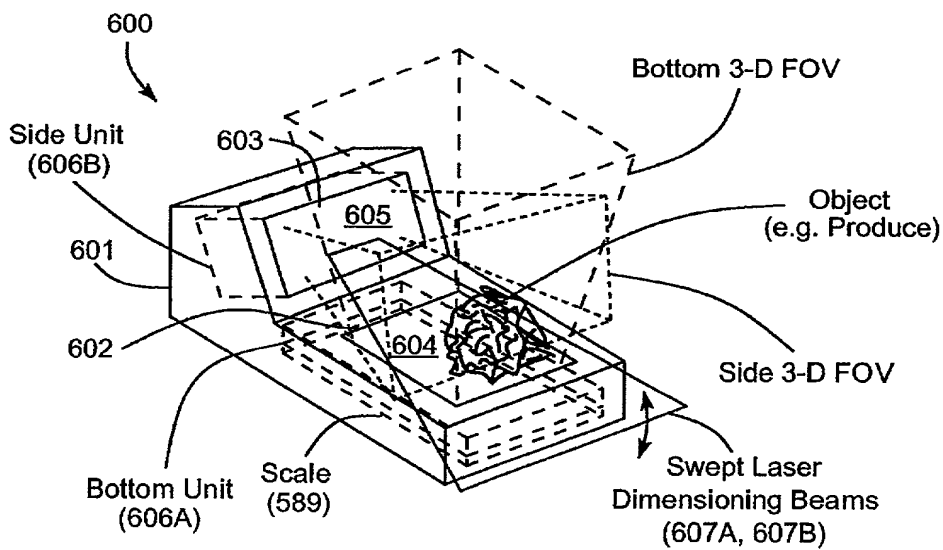
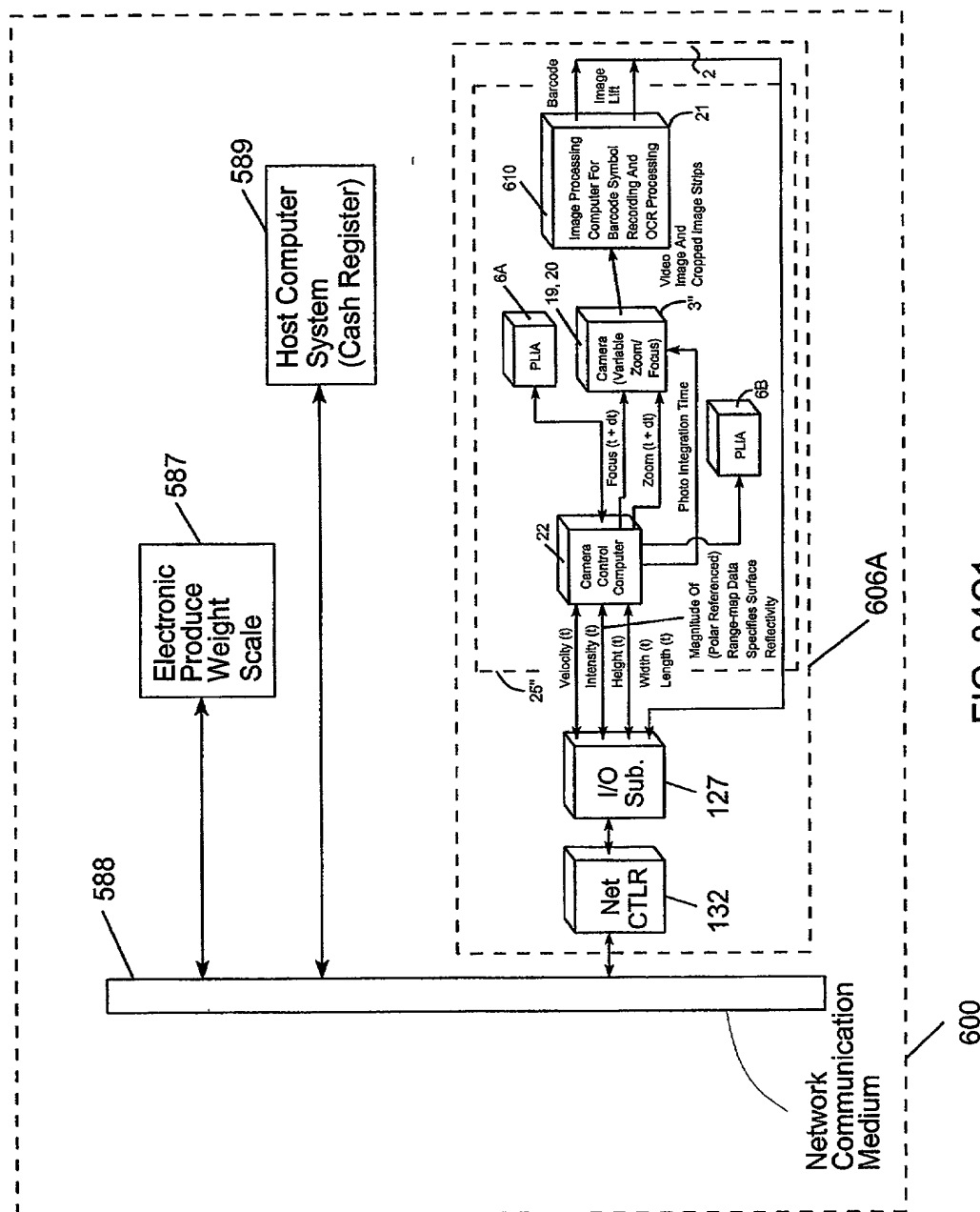


FIG. 34B



THE UNIVERSITY OF CHICAGO



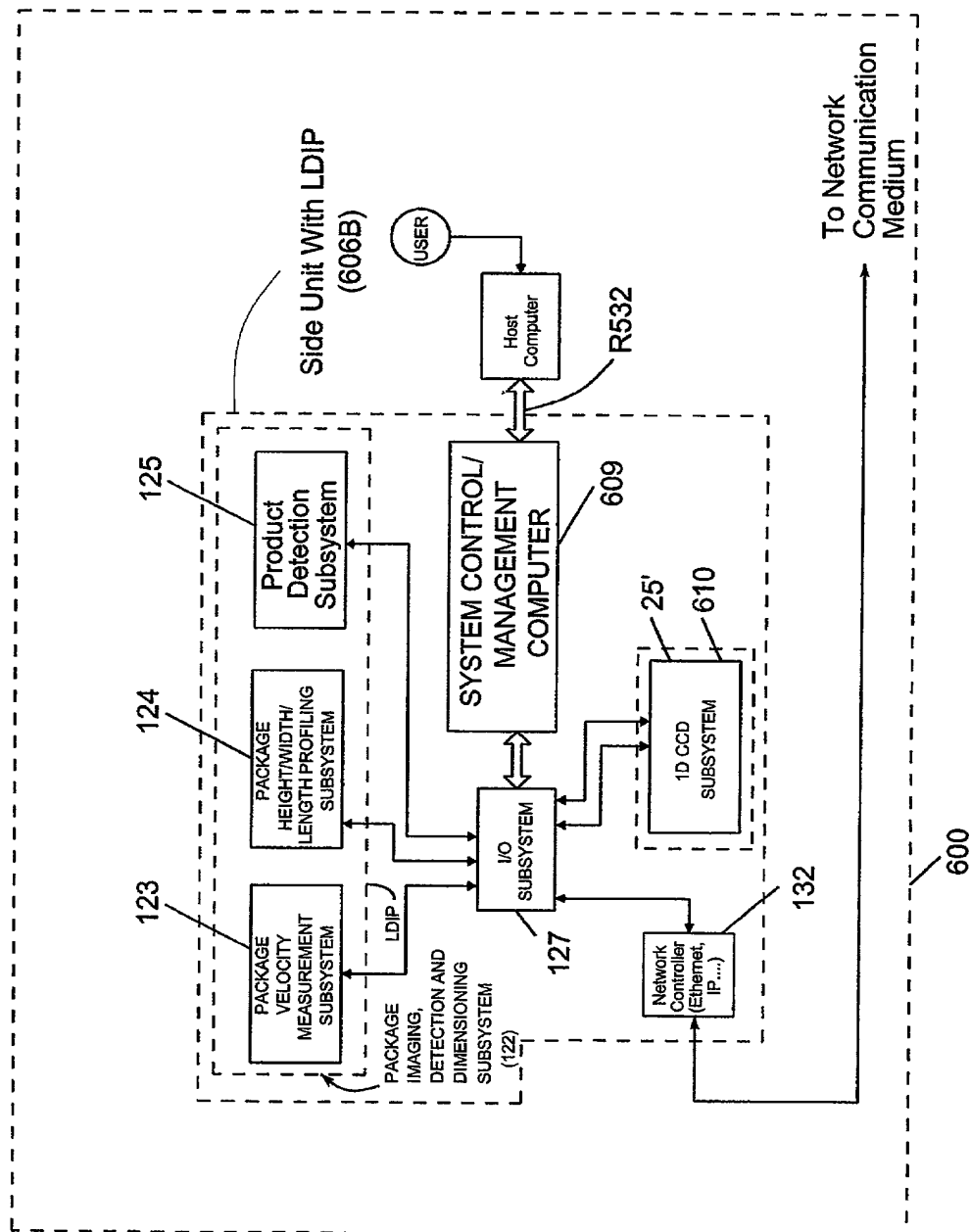
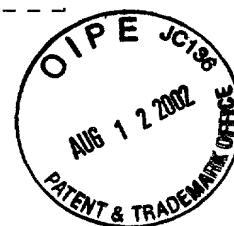


FIG. 34C2



2007140 0001

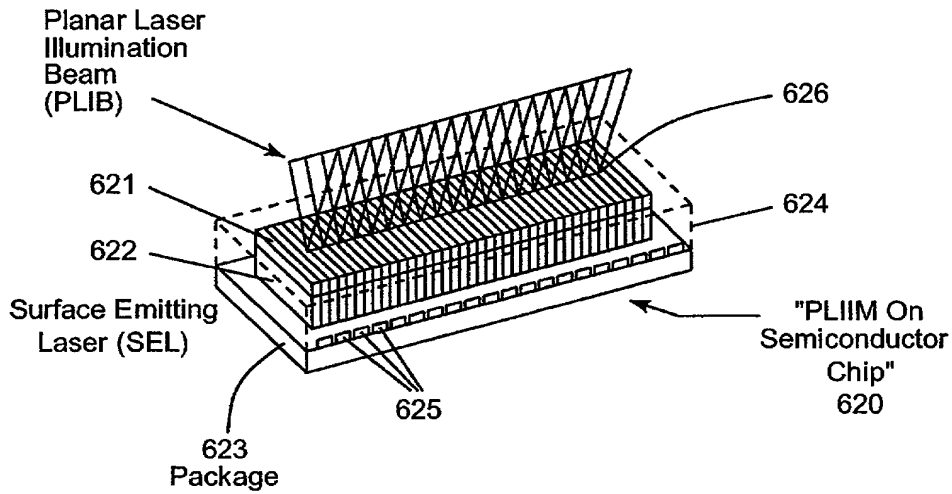


FIG. 35A

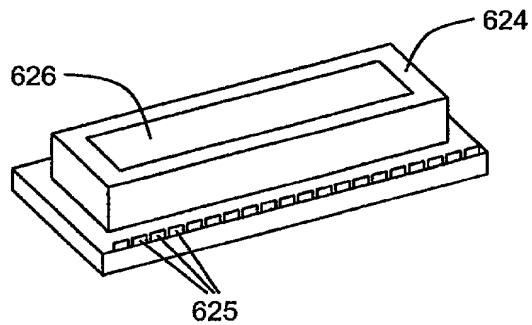


FIG. 35B



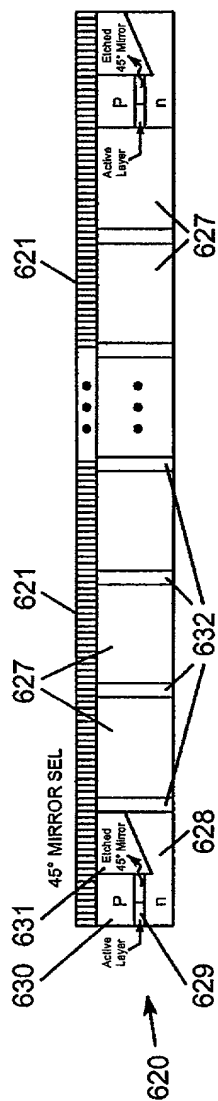


FIG. 36A

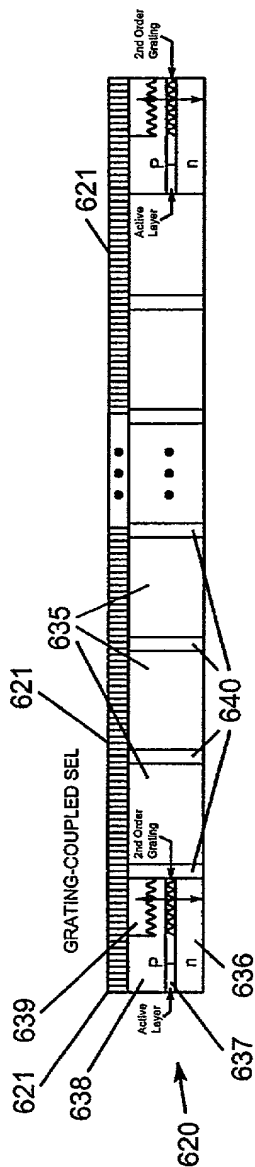


FIG. 36B

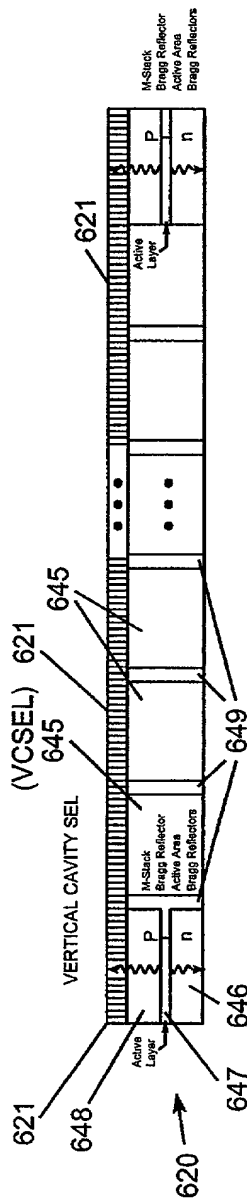


FIG. 36C



2007140 08001

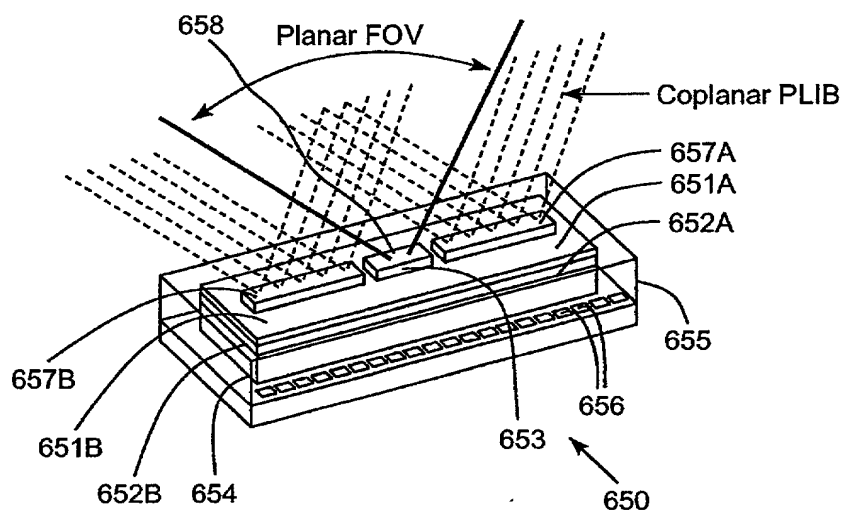


FIG. 37



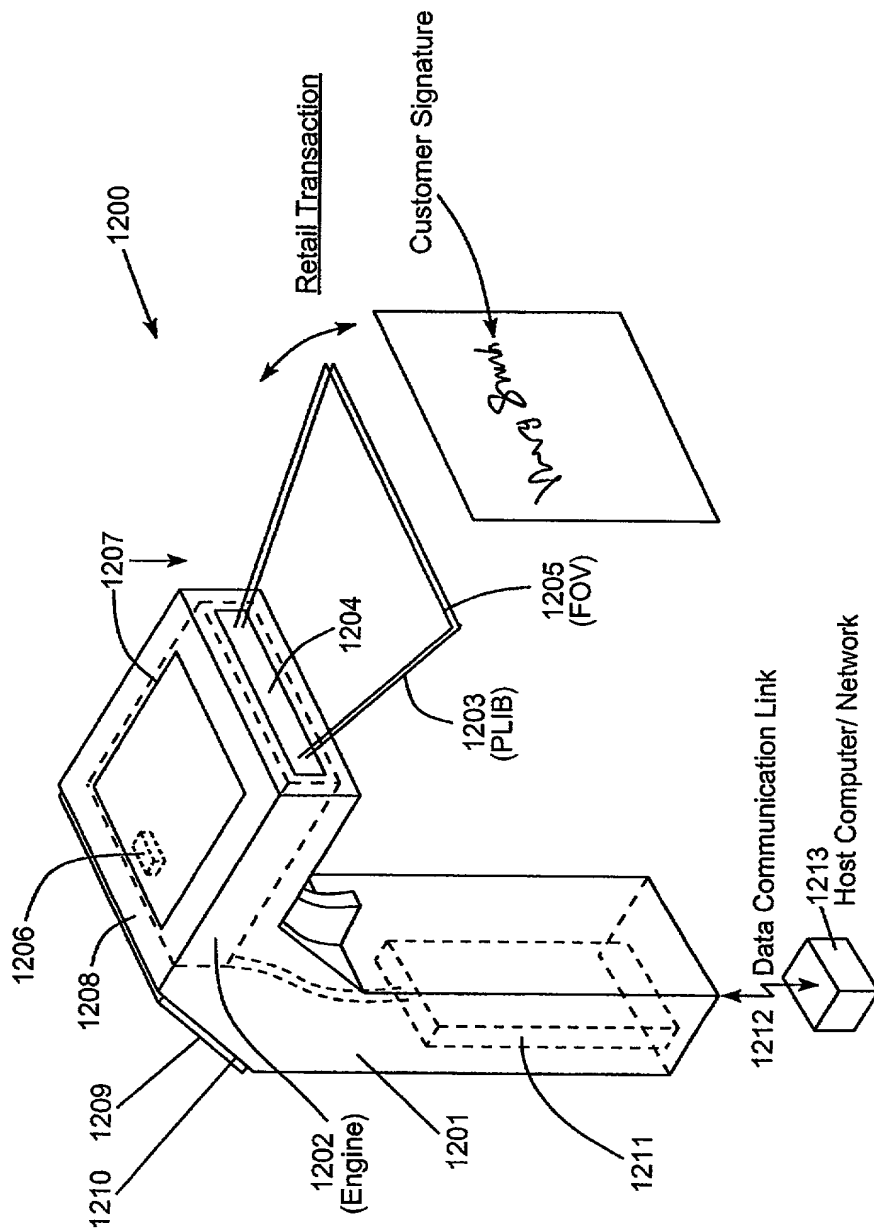


FIG. 39A



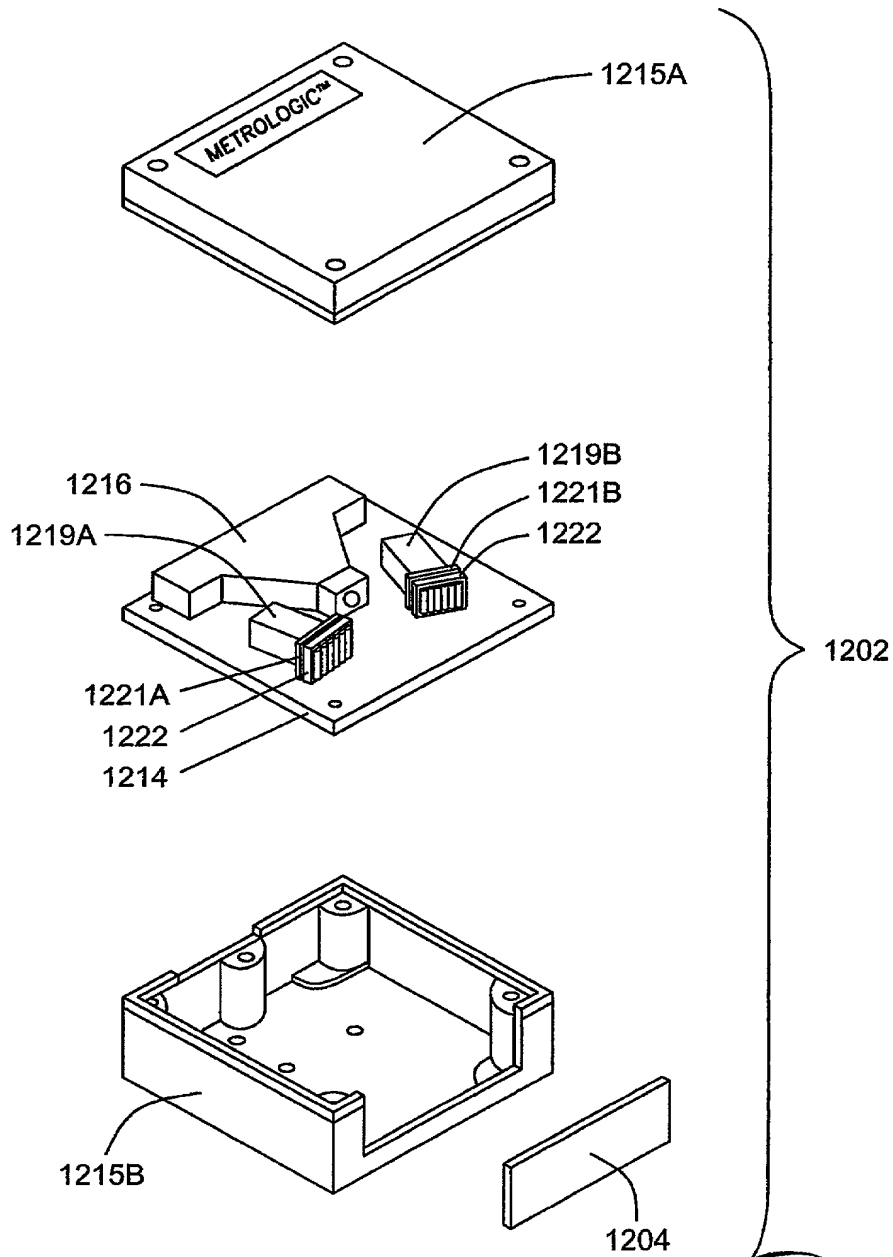


FIG. 39B



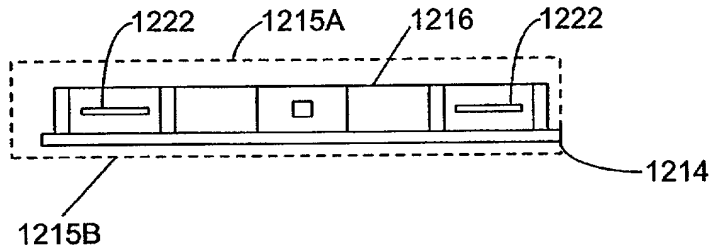


FIG. 39D

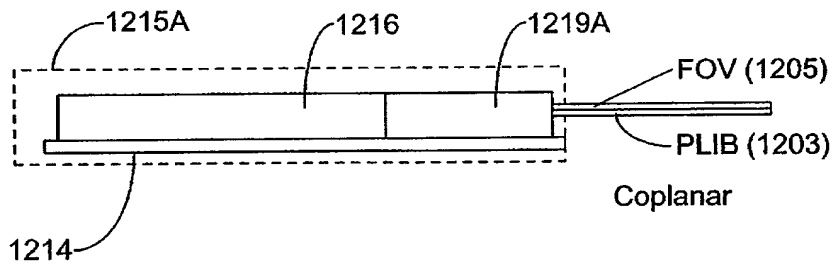
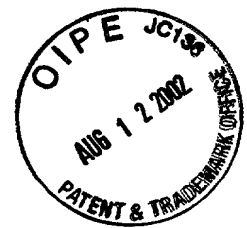


FIG. 39E



2021200140001

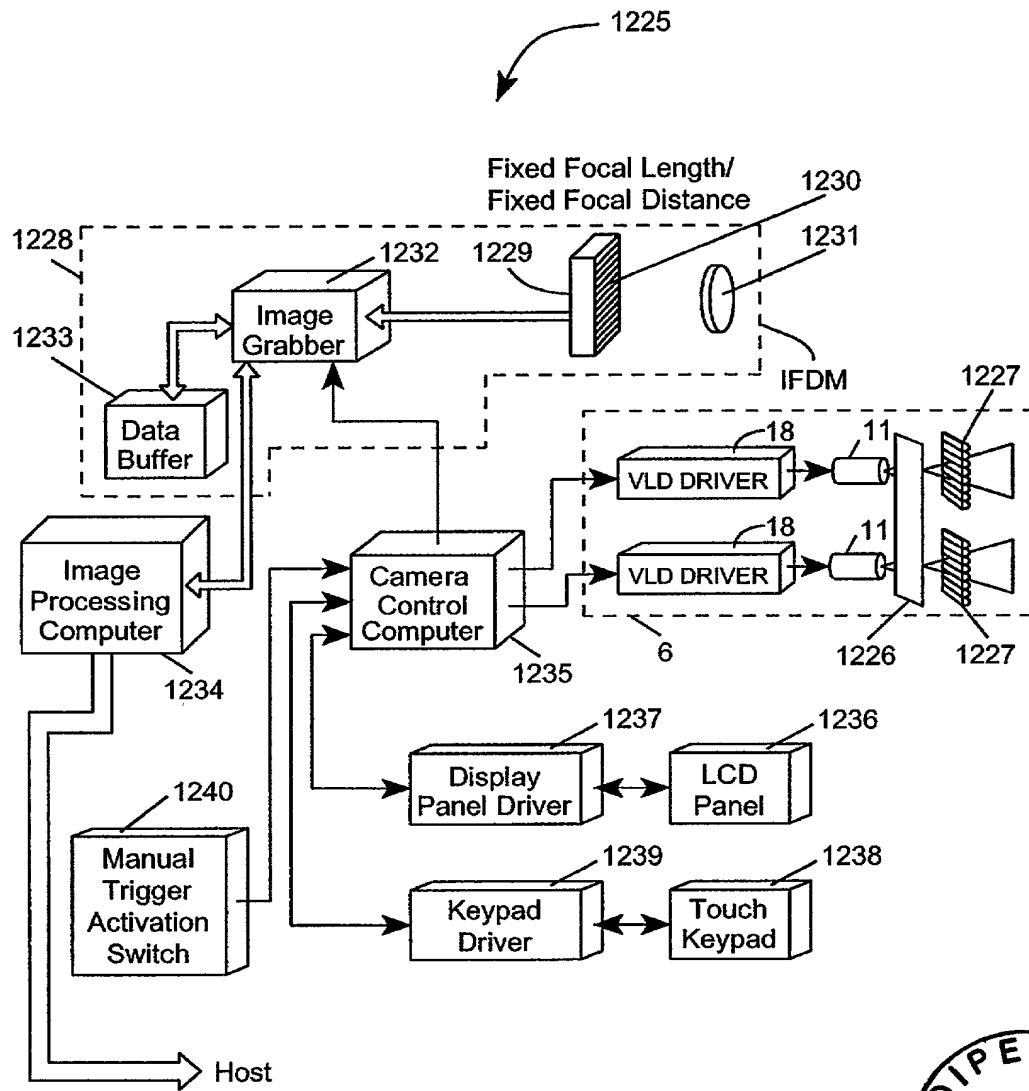
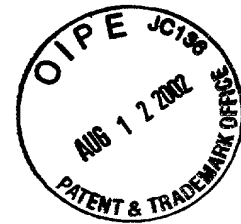
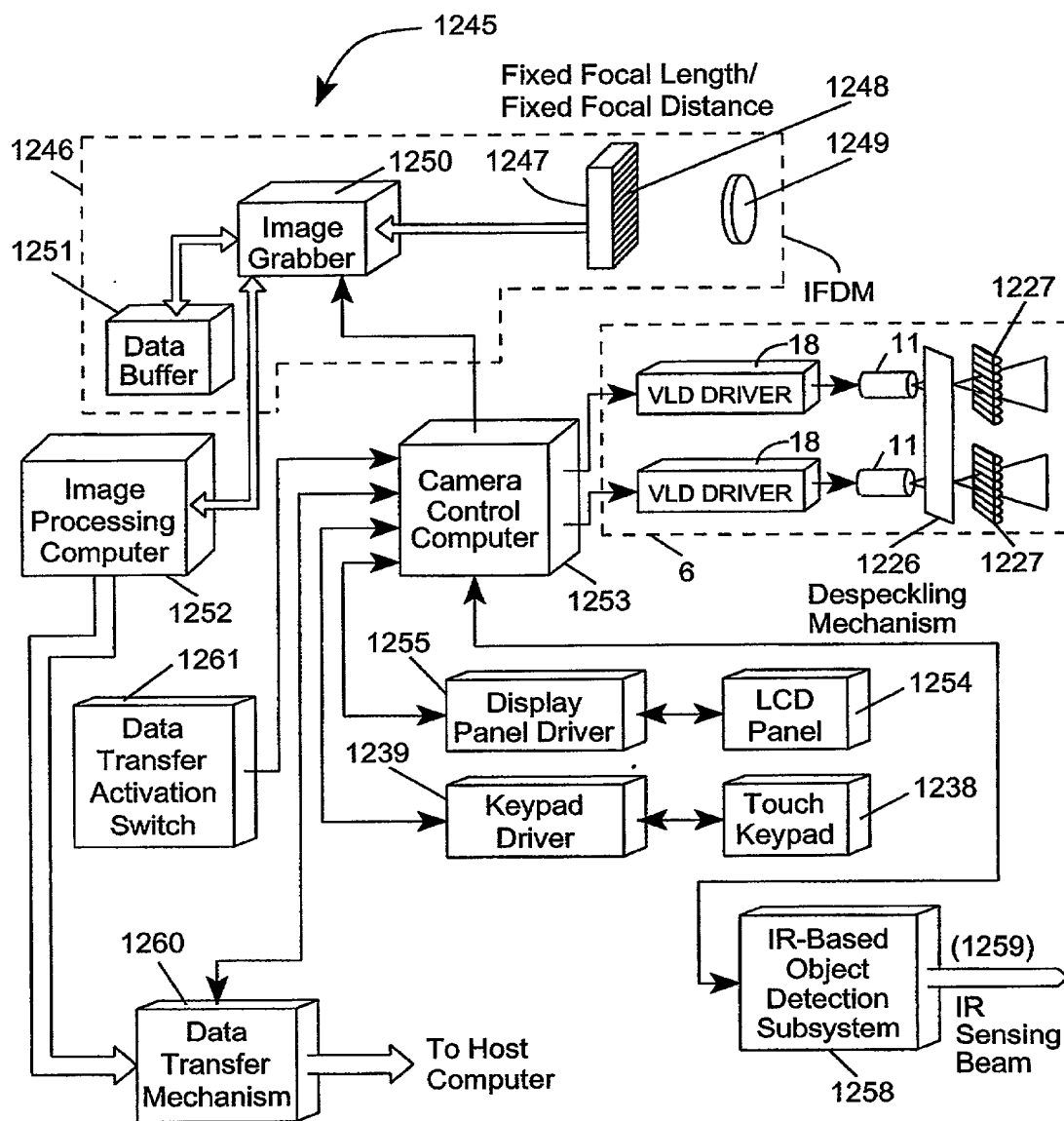


FIG. 40A1

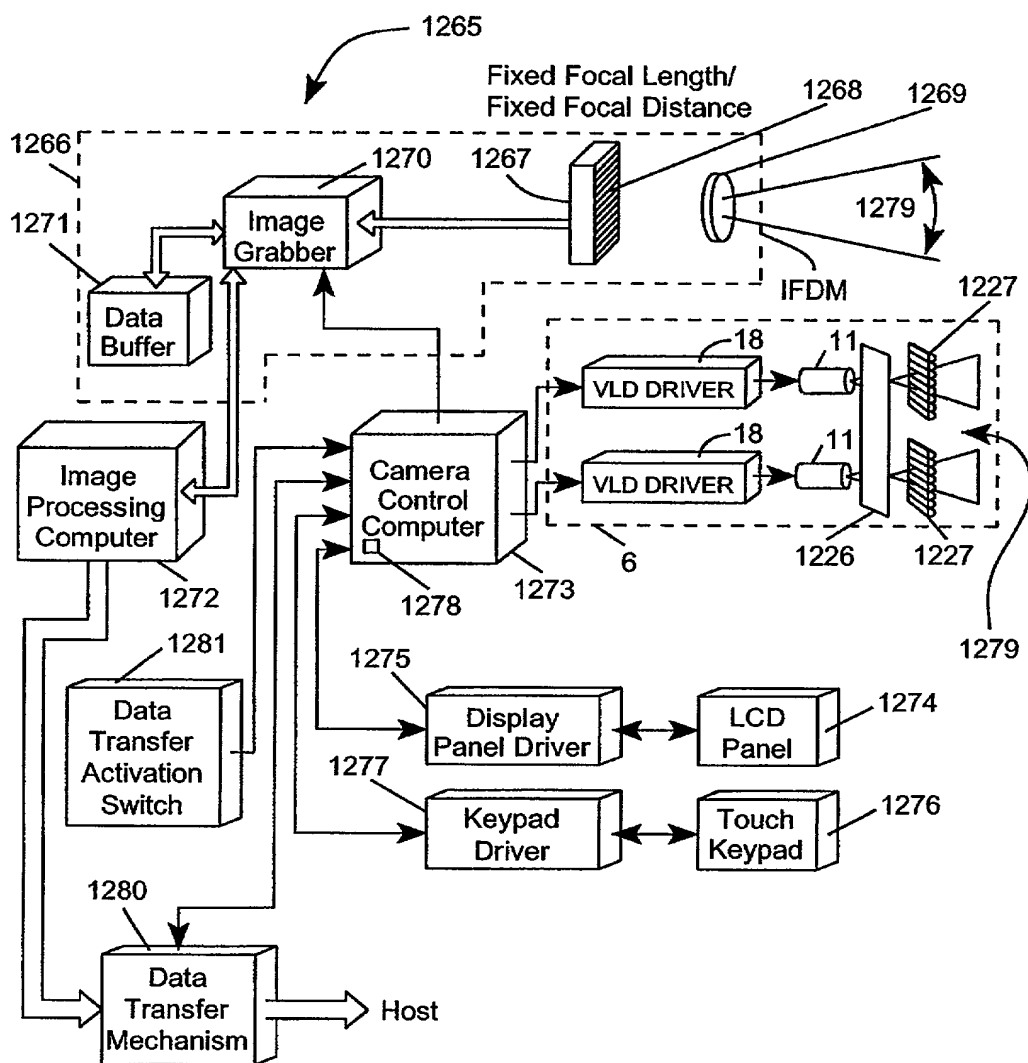




Automatic with IR Object Detection

FIG. 40A2



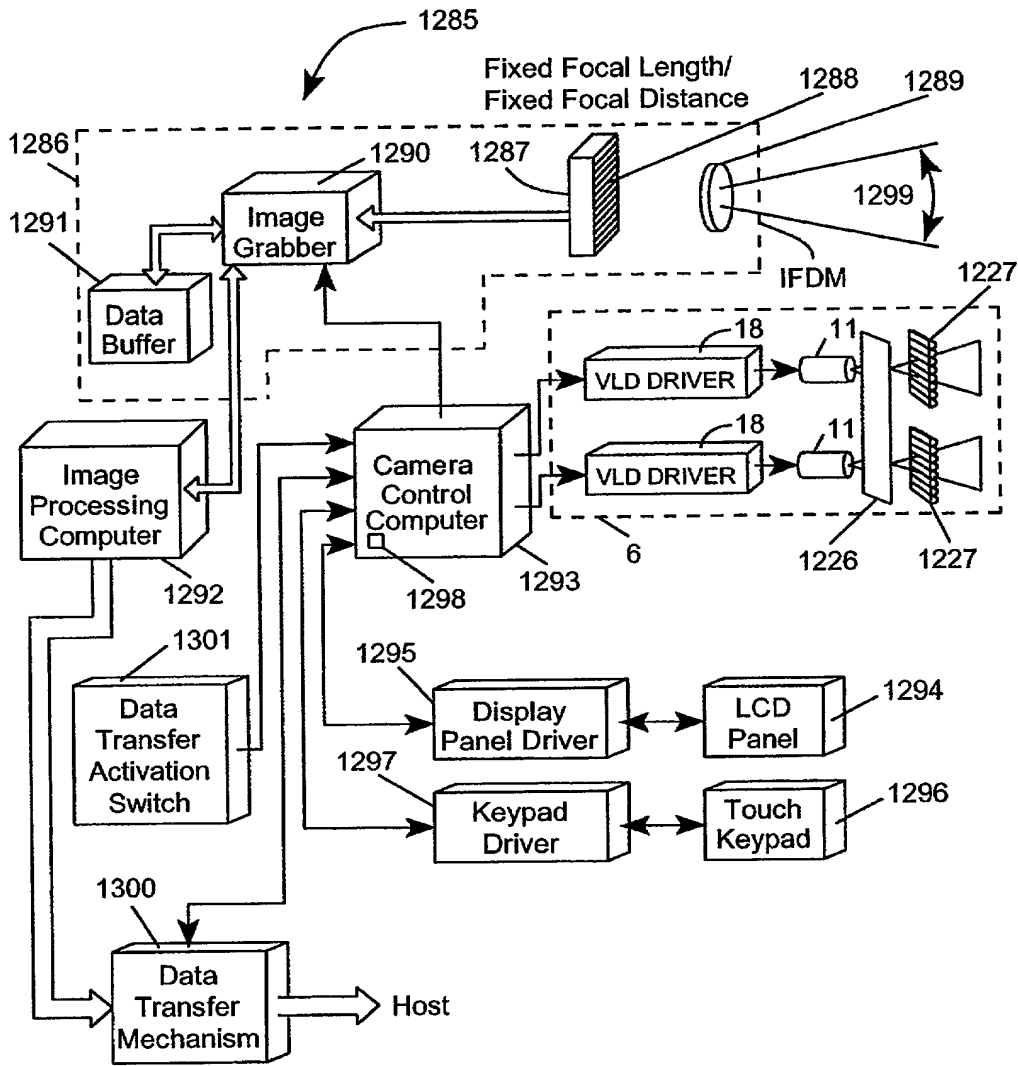


Automatic with Laser Based Object Detection

FIG. 40A3



202180-01129001



Automatic with Passive CCD
Based Object Detection

FIG. 40A4



FIG. 40A5



Fixed Focal Length/ Variable Or Dynamic Focus 1330

1326

1332

Data Buffer

Image Grabber 1331

1329

1328

Image Processing Computer 1333

Camera Control Computer 1334

VLD DRIVER 18

VLD DRIVER 18

6

11

11

1226

1227

1227

1336

1335

Display Panel Driver

LCD Panel

1339

Manual Trigger Activation Switch

1338

1337

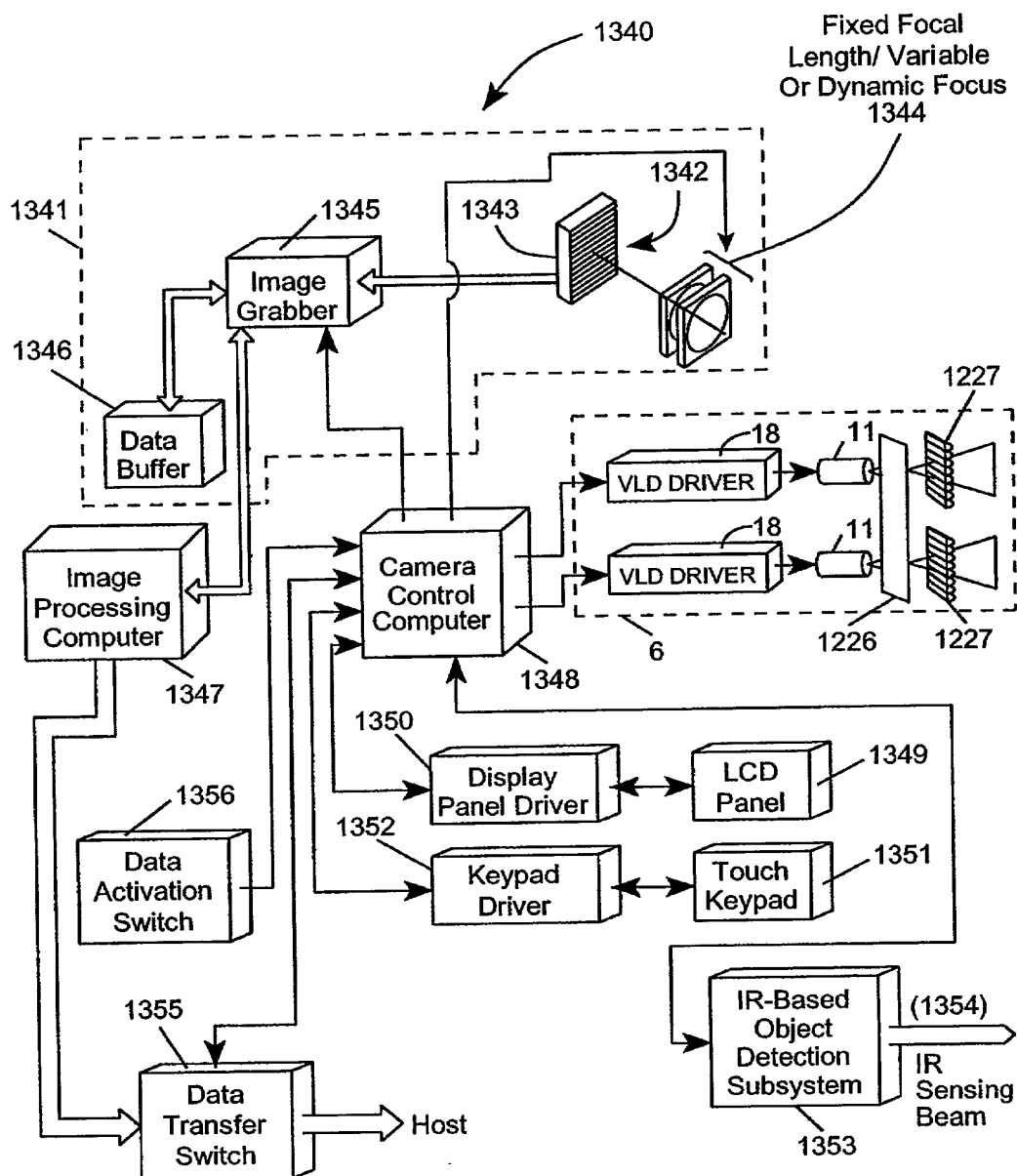
Keypad Driver

Touch Keypad

Host

Manual Activation





Automatic With IR-Based Object Detection

FIG. 40B2



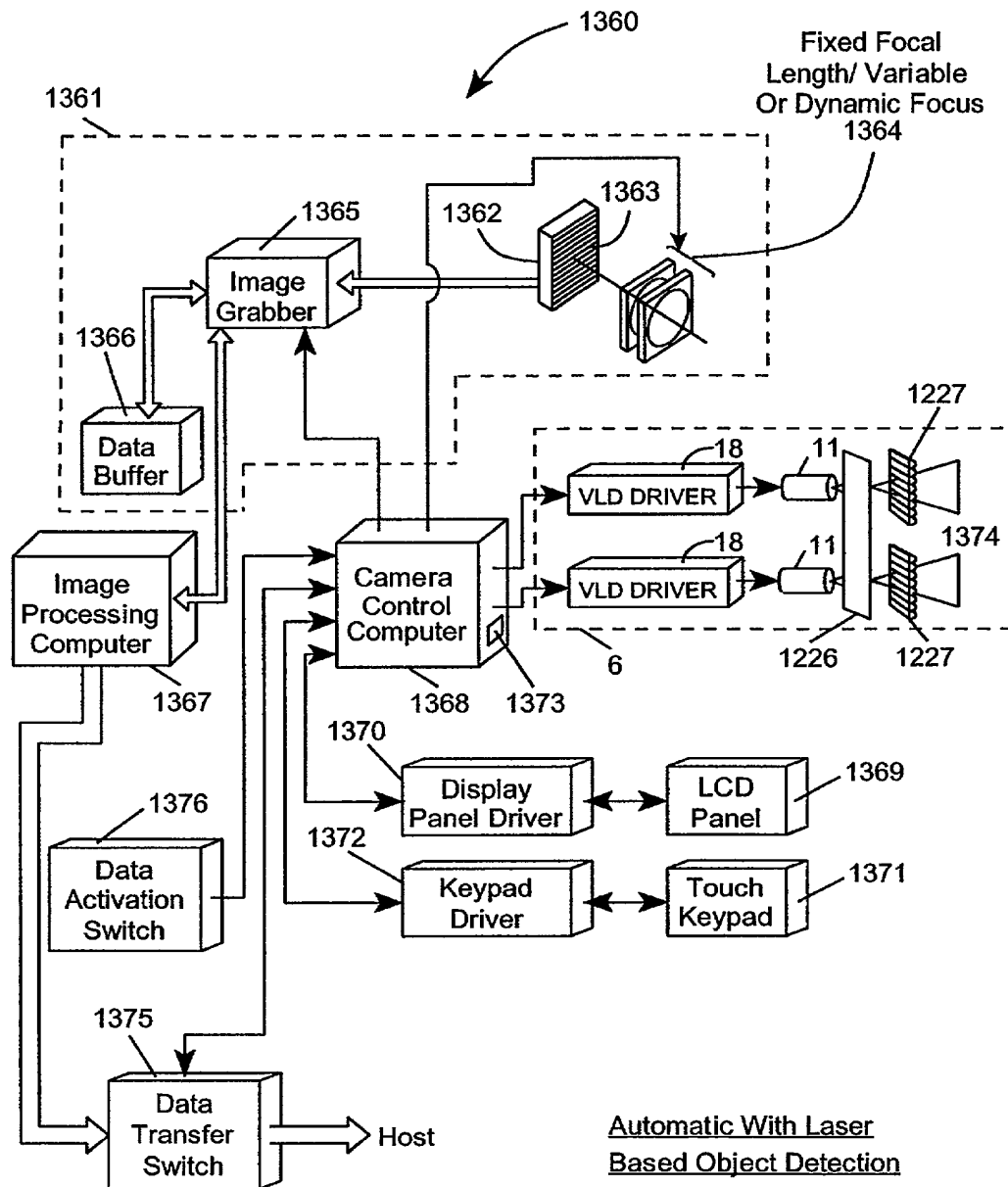


FIG. 40B3



Automatic With Passive CCD-Based Object Detection

FIG. 40B4



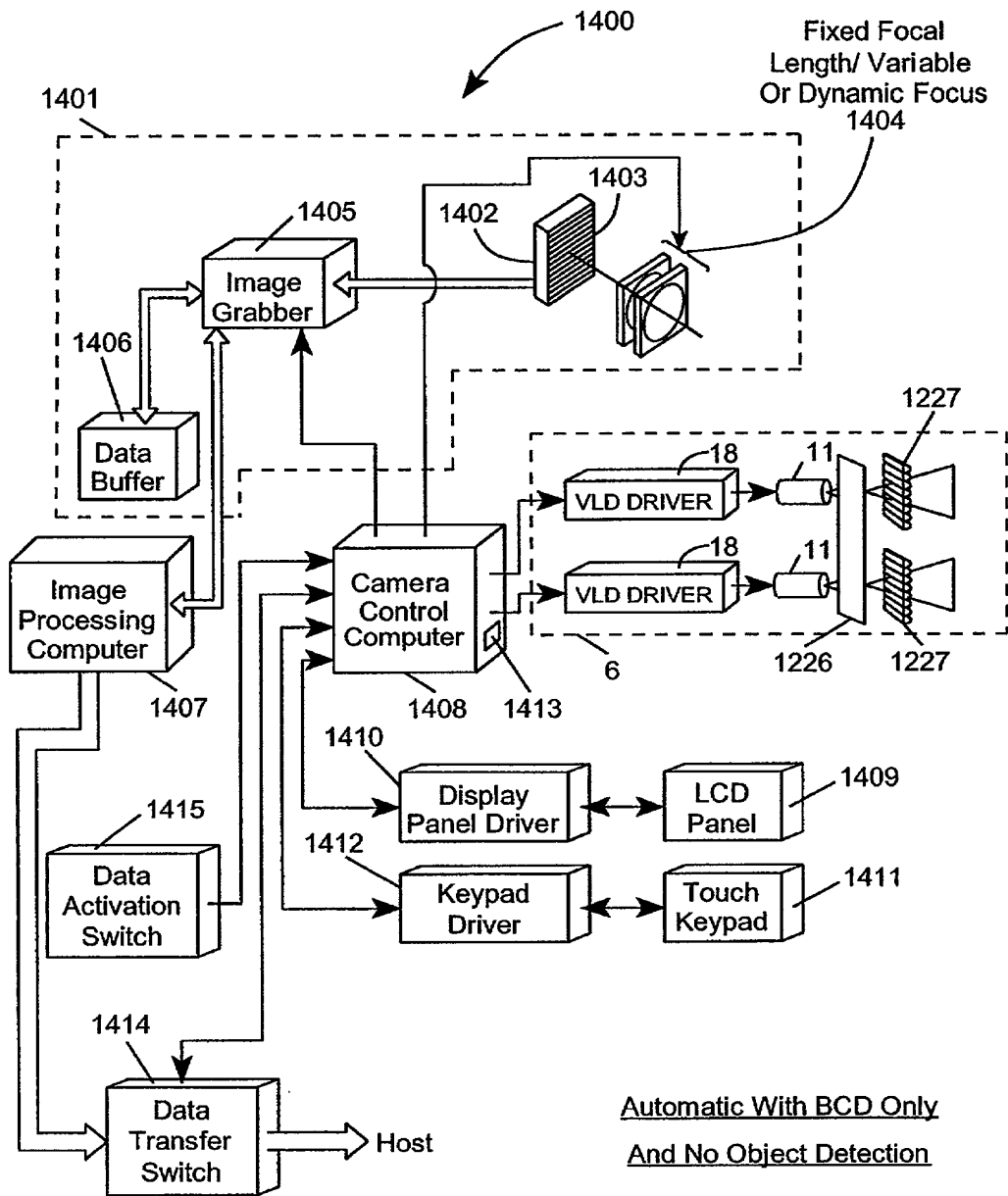


FIG. 40B5



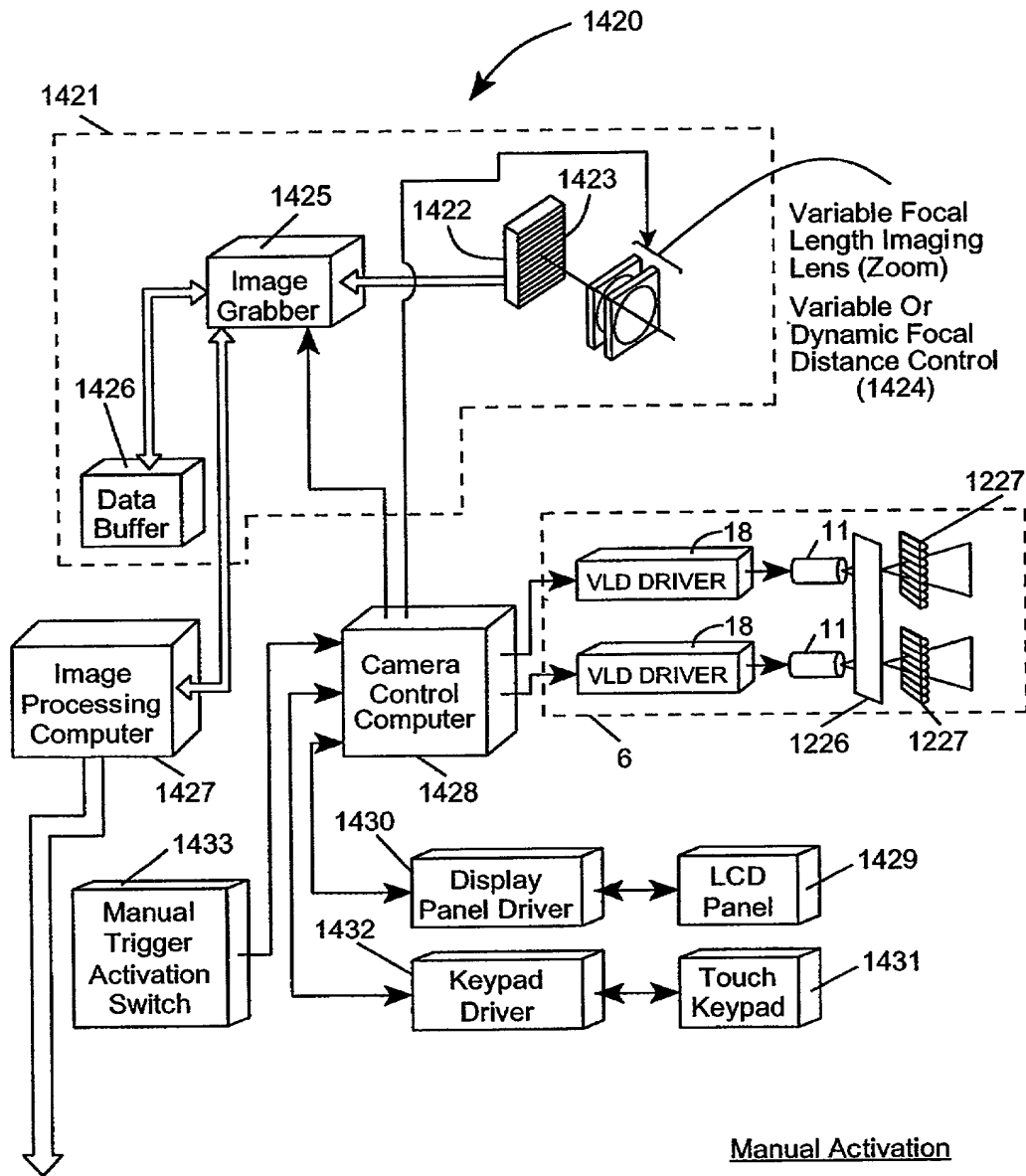


FIG. 40C1



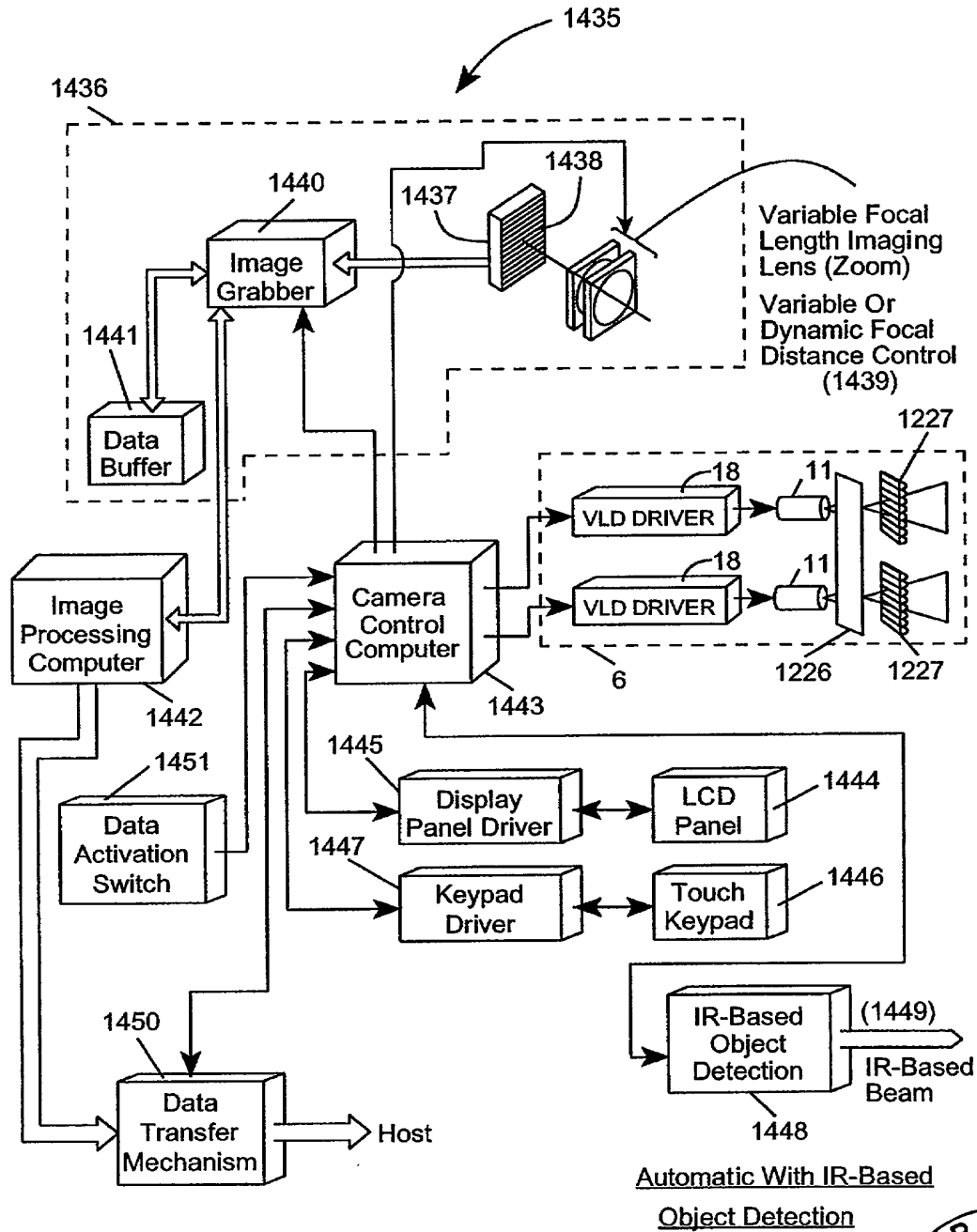
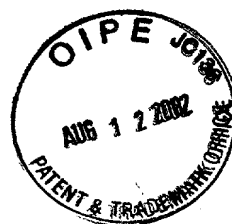


FIG. 40C2



FIG. 40C3



202180* 04743007

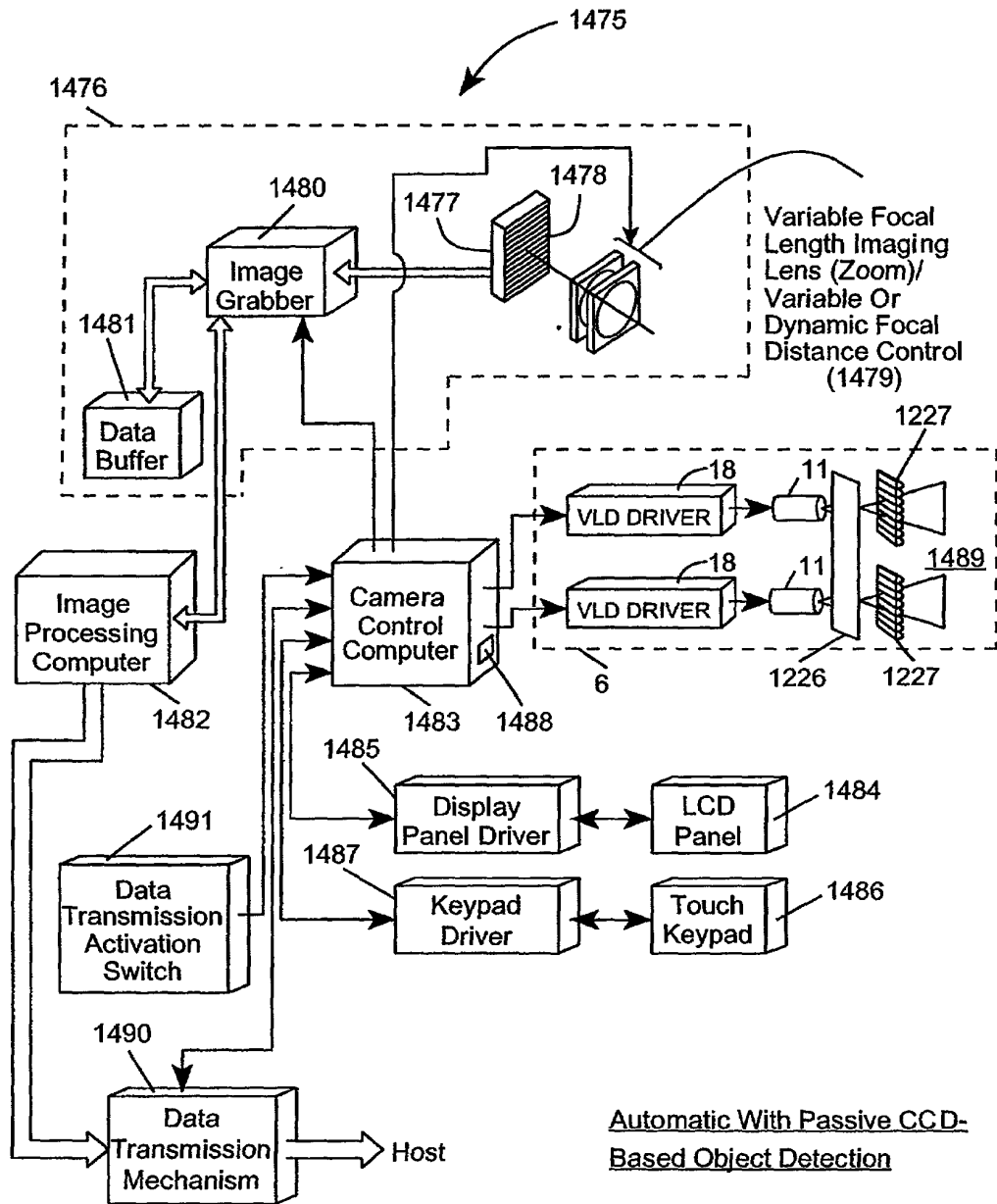


FIG. 40C4



200204129007

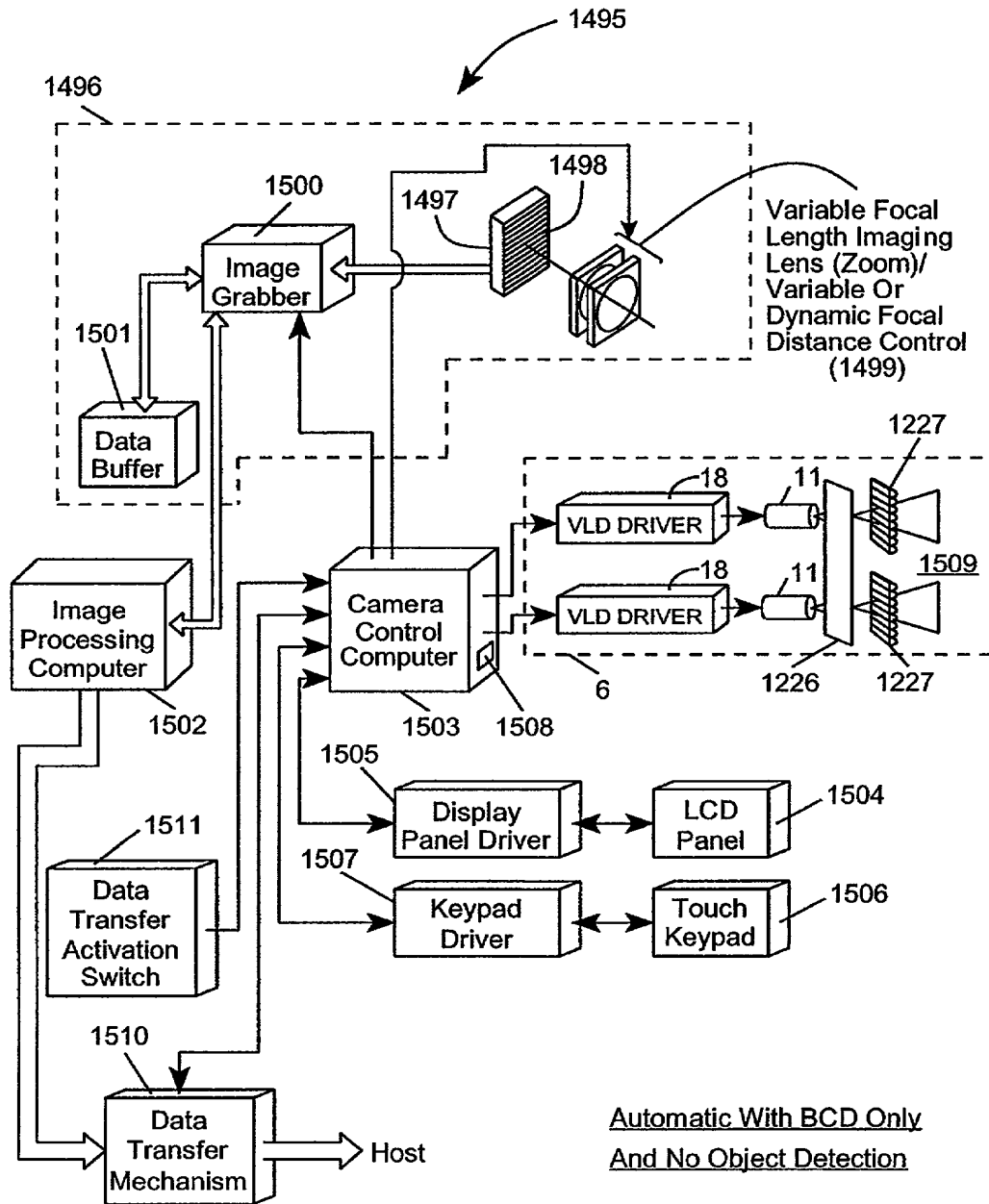


FIG. 40C5



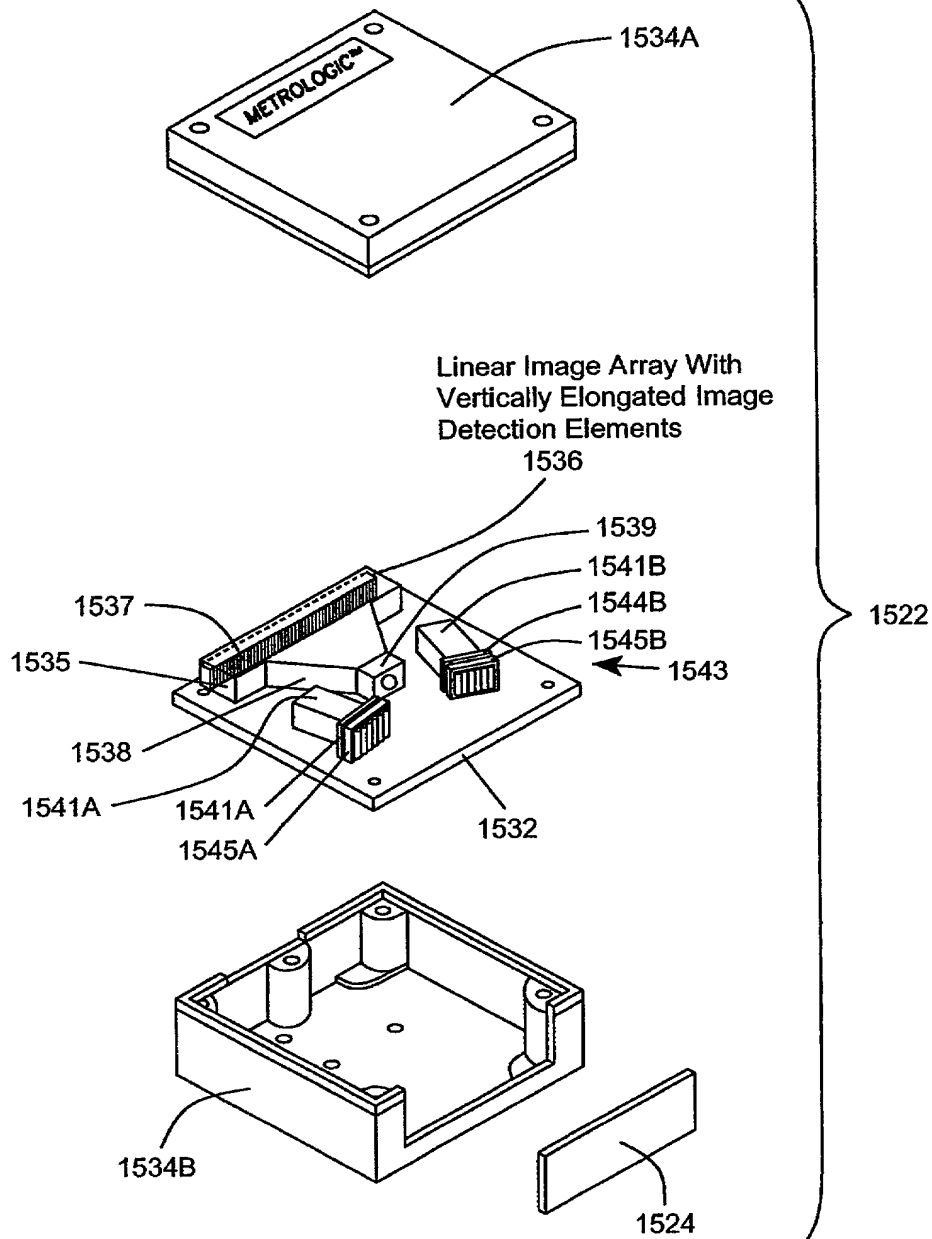


FIG. 41B



20021220 04129001

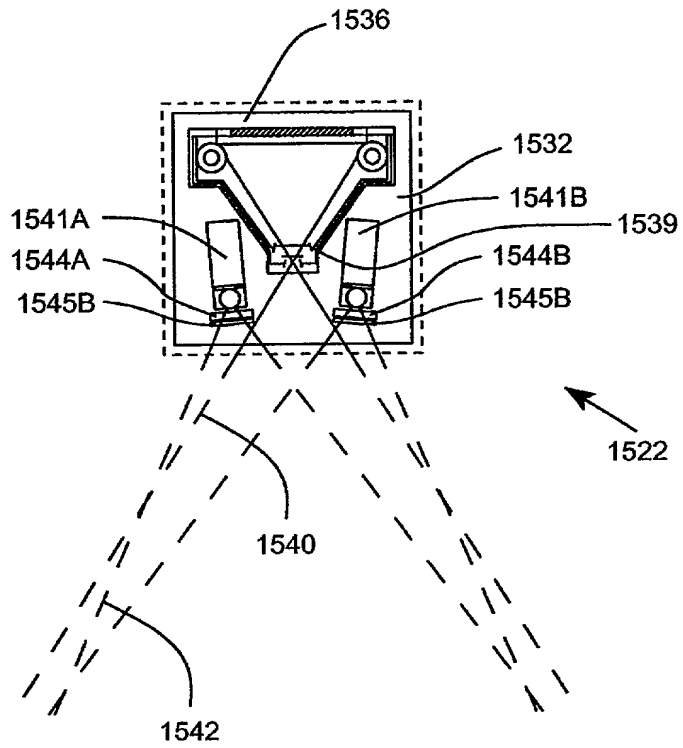


FIG. 41C

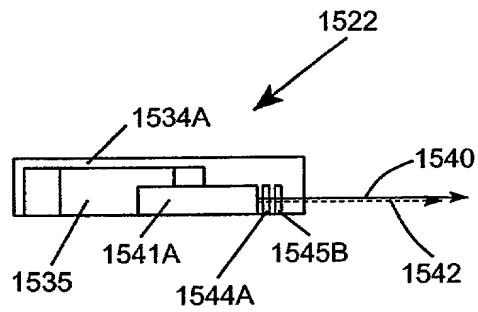


FIG. 41D



20020801 04129001

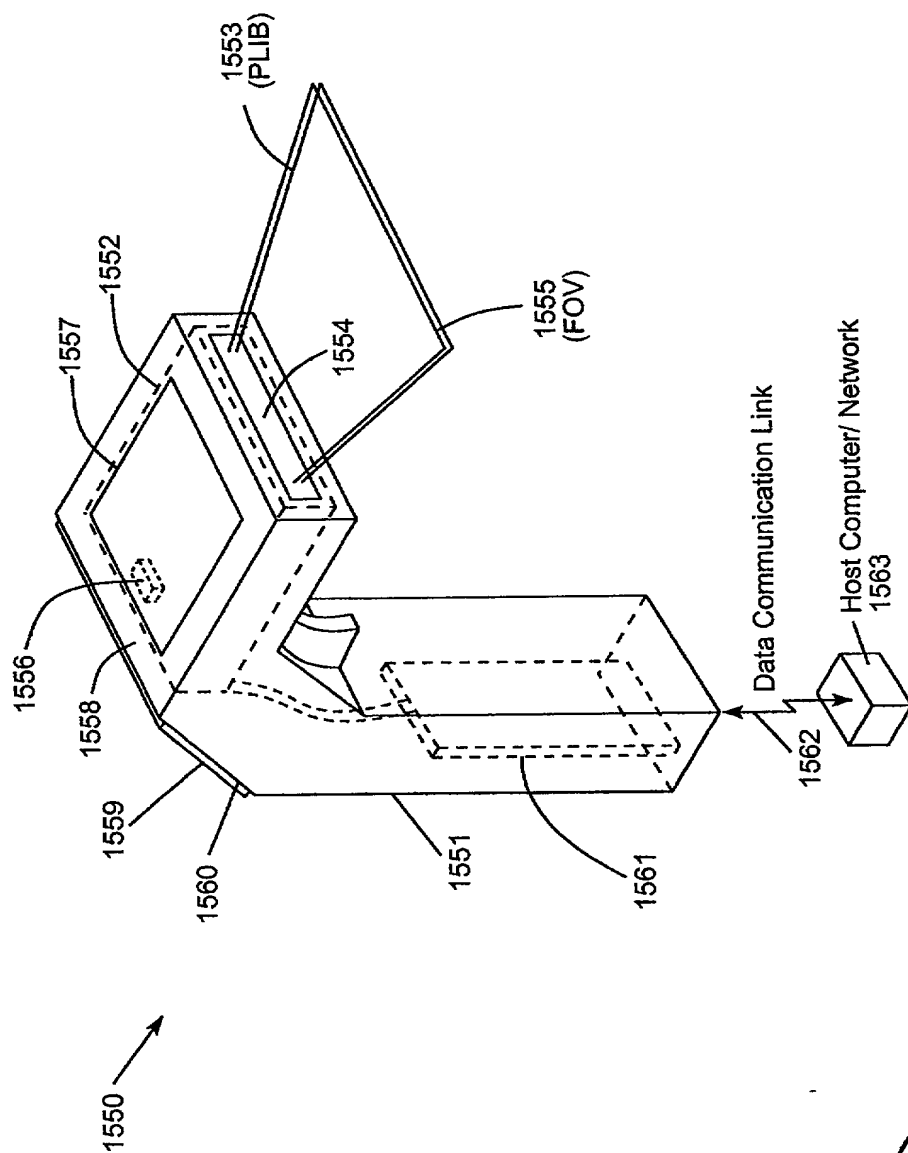


FIG. 42A



202180-01/23001

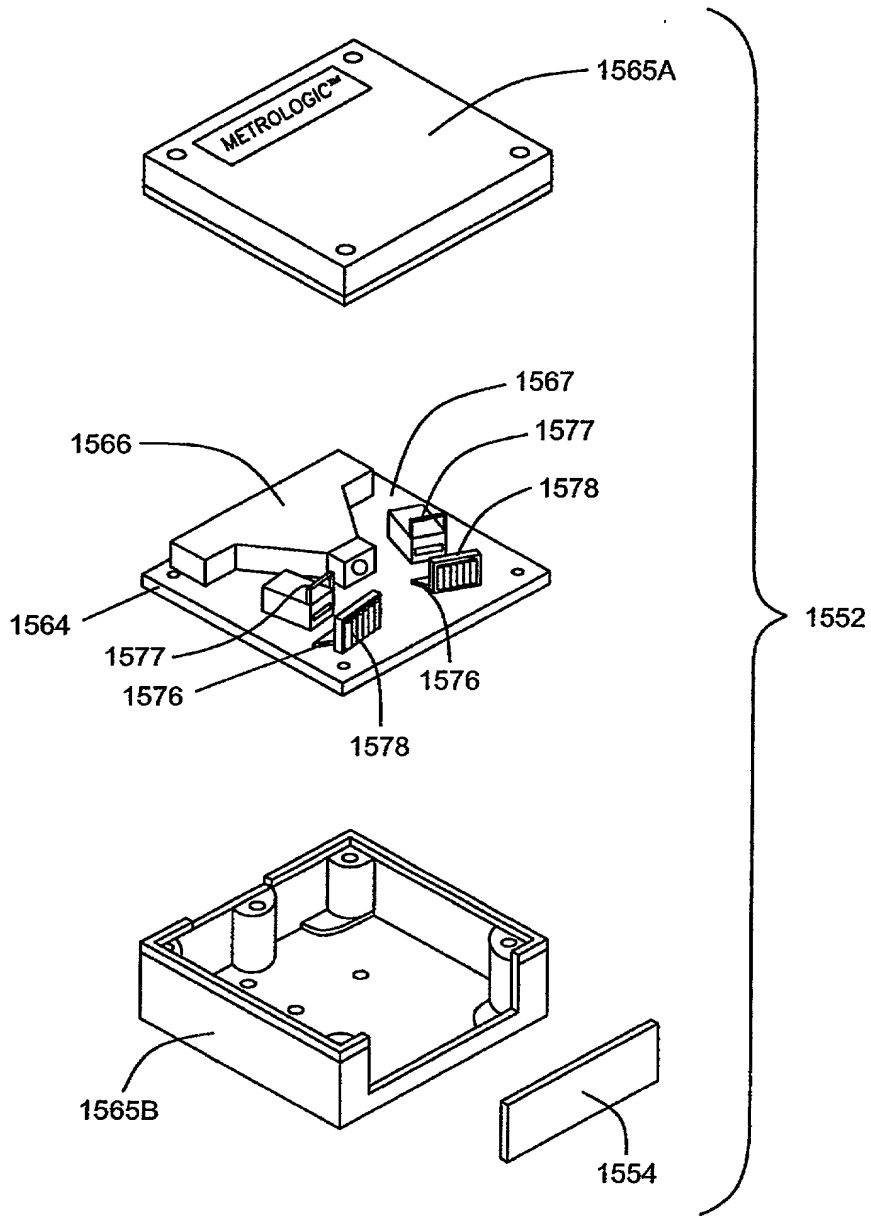


FIG. 42B



20250704T23001

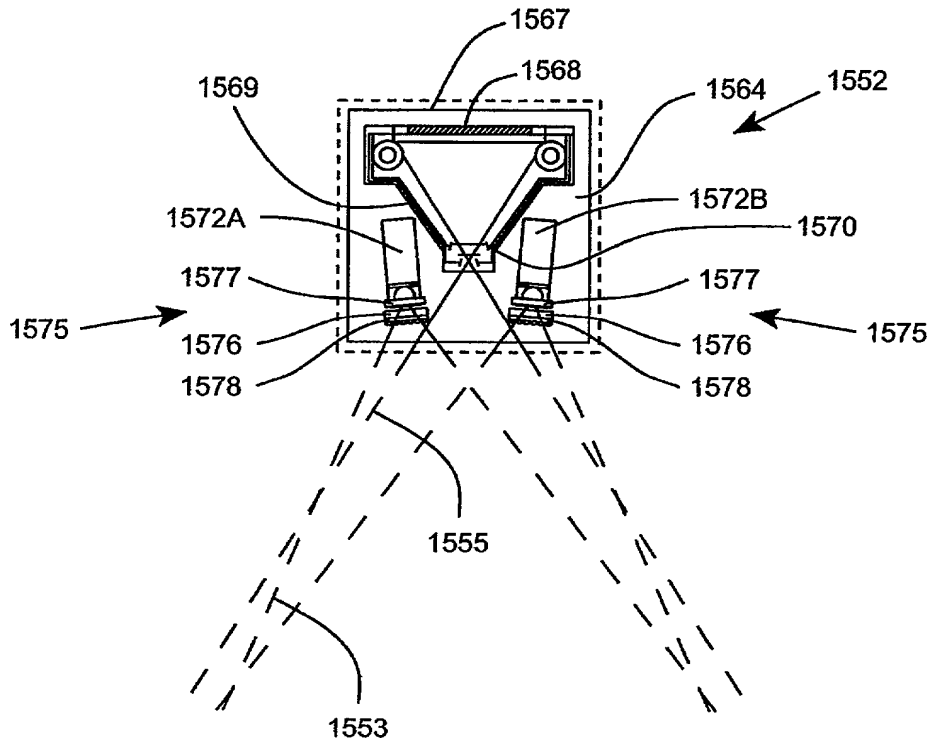


FIG. 42C

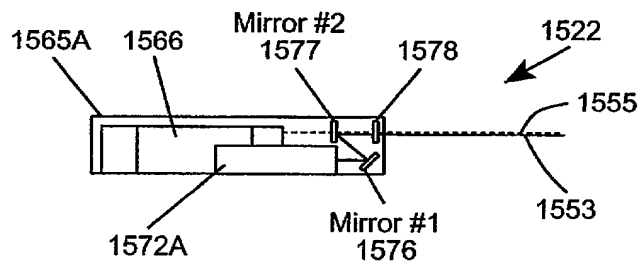


FIG. 42D



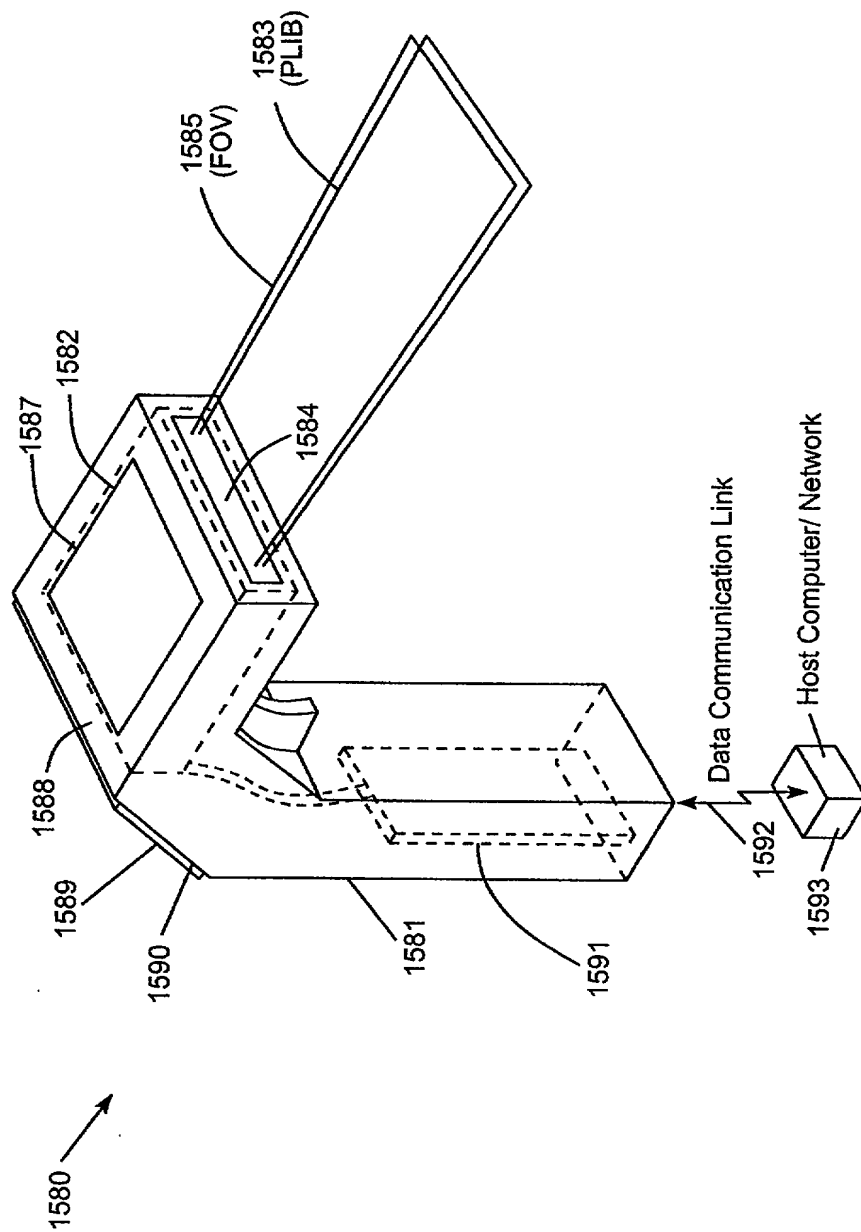


FIG. 43A



20020412001

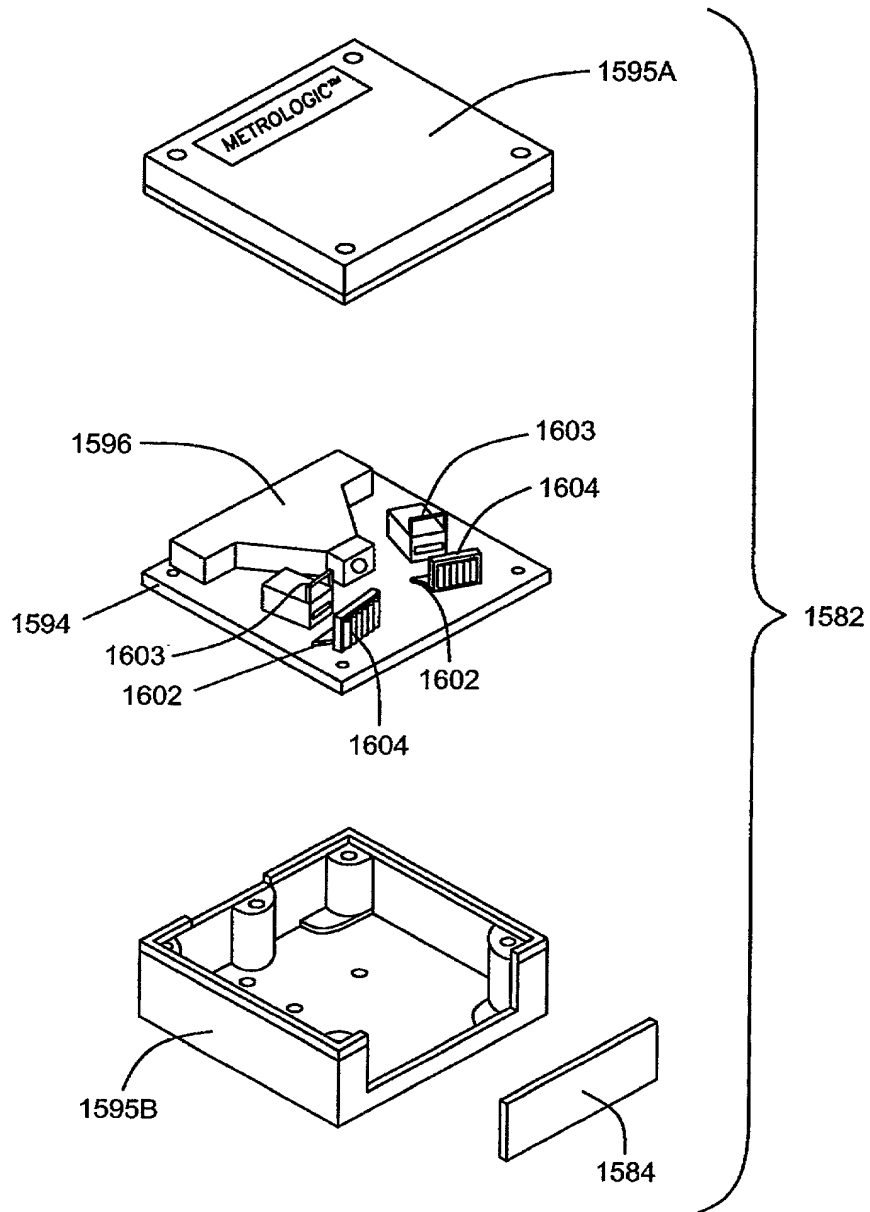


FIG. 43B



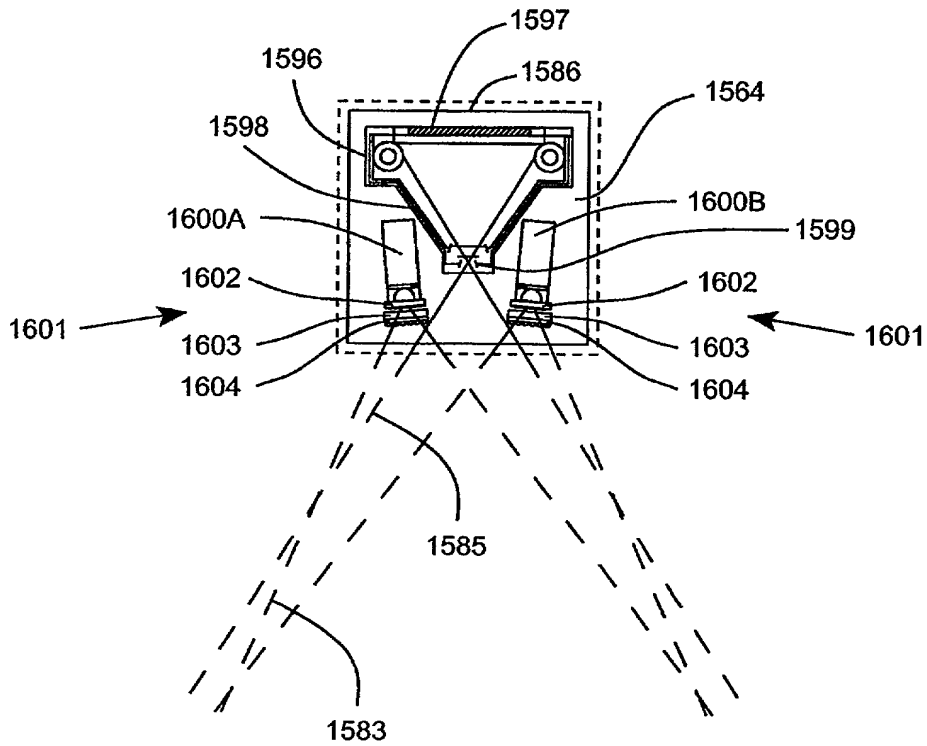


FIG. 43C

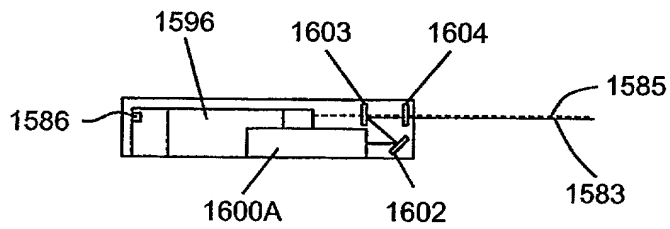


FIG. 43D



2006740 0812 2002

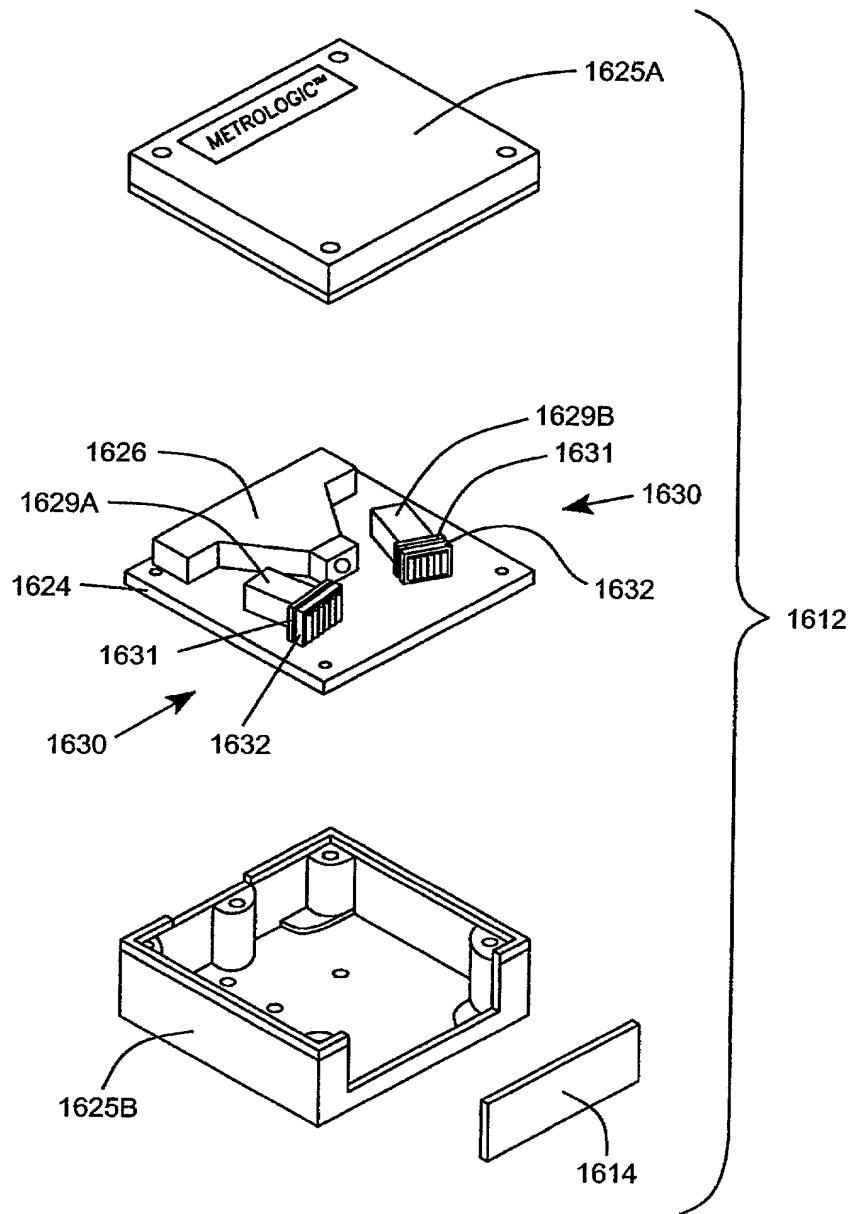


FIG. 44B



2027407/2007

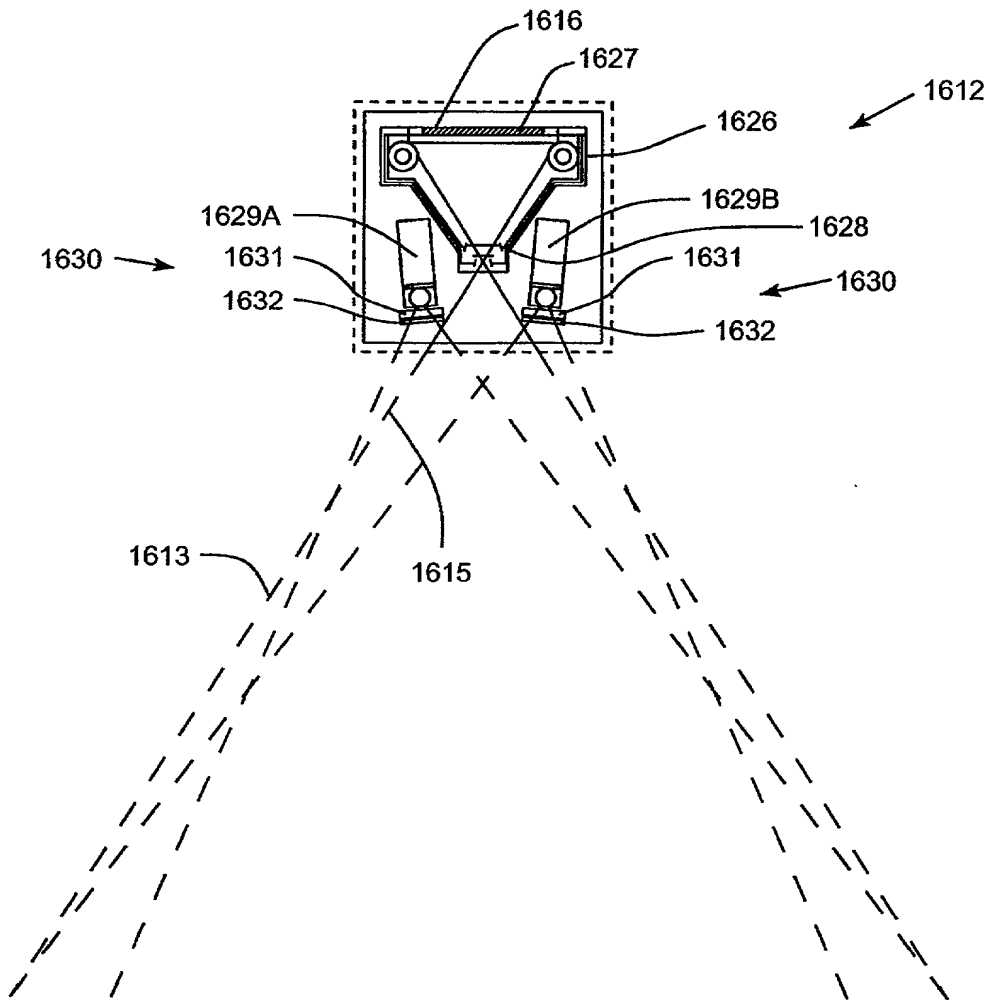


FIG. 44C



20210001-0012

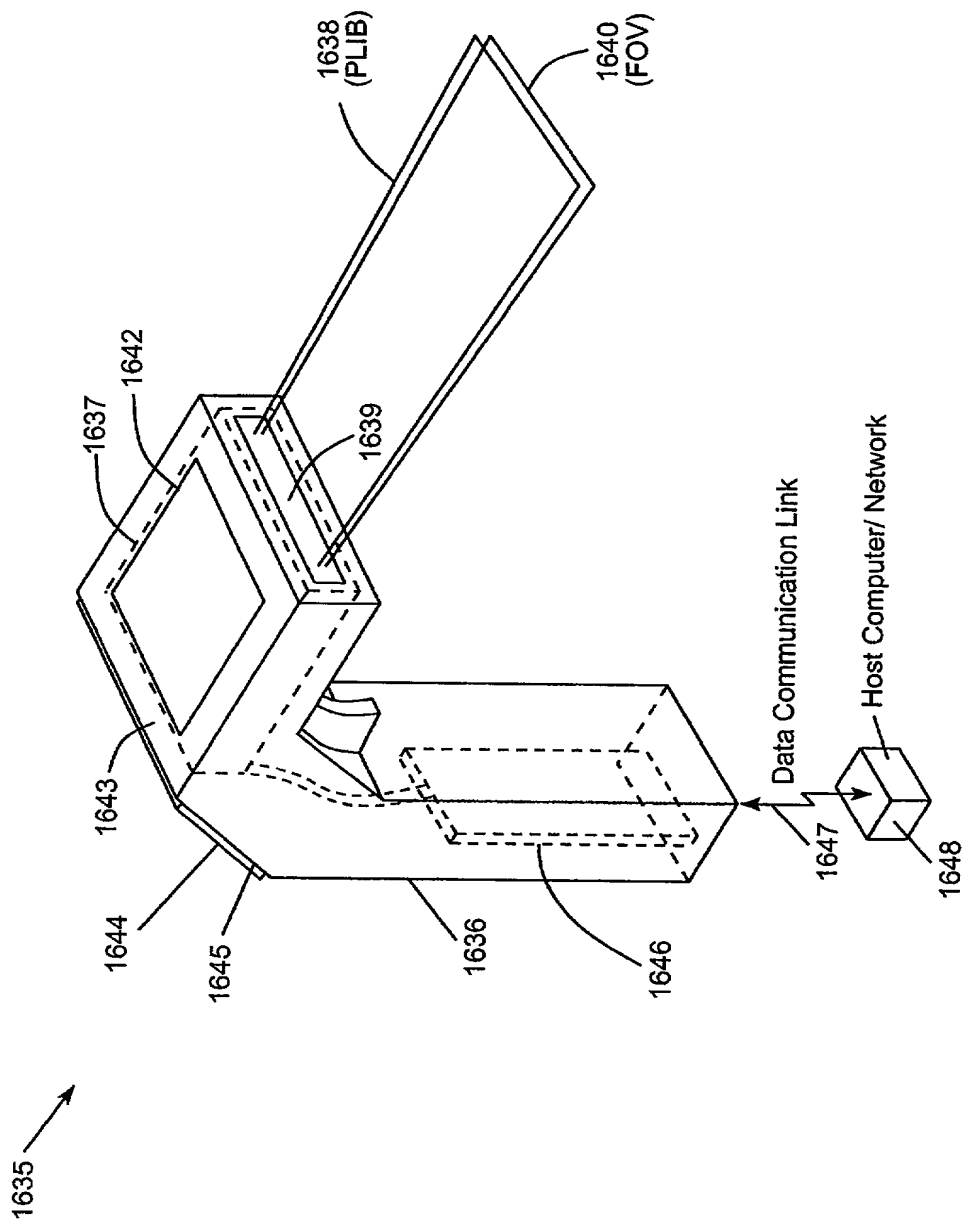


FIG. 45A



2002 FEB 20 11 42 AM '02

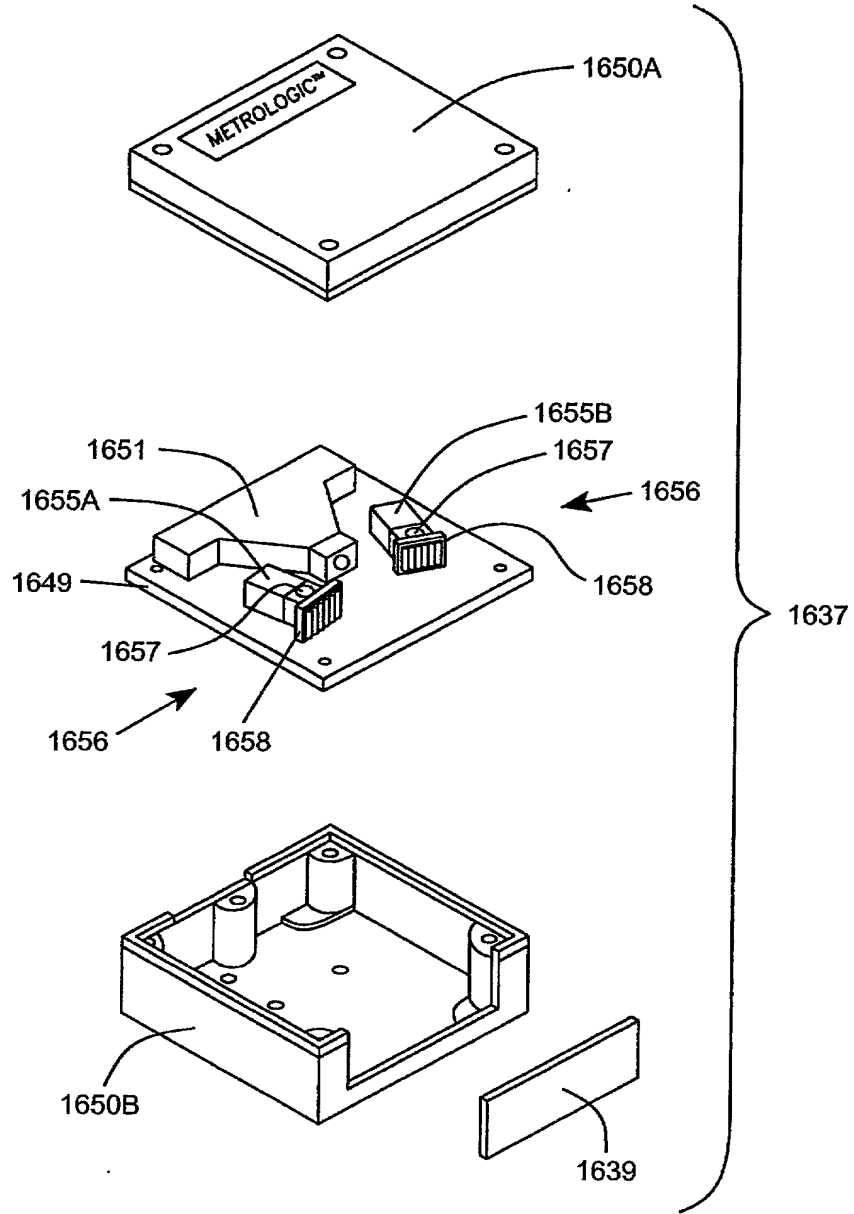


FIG. 45B



202180* 04149001

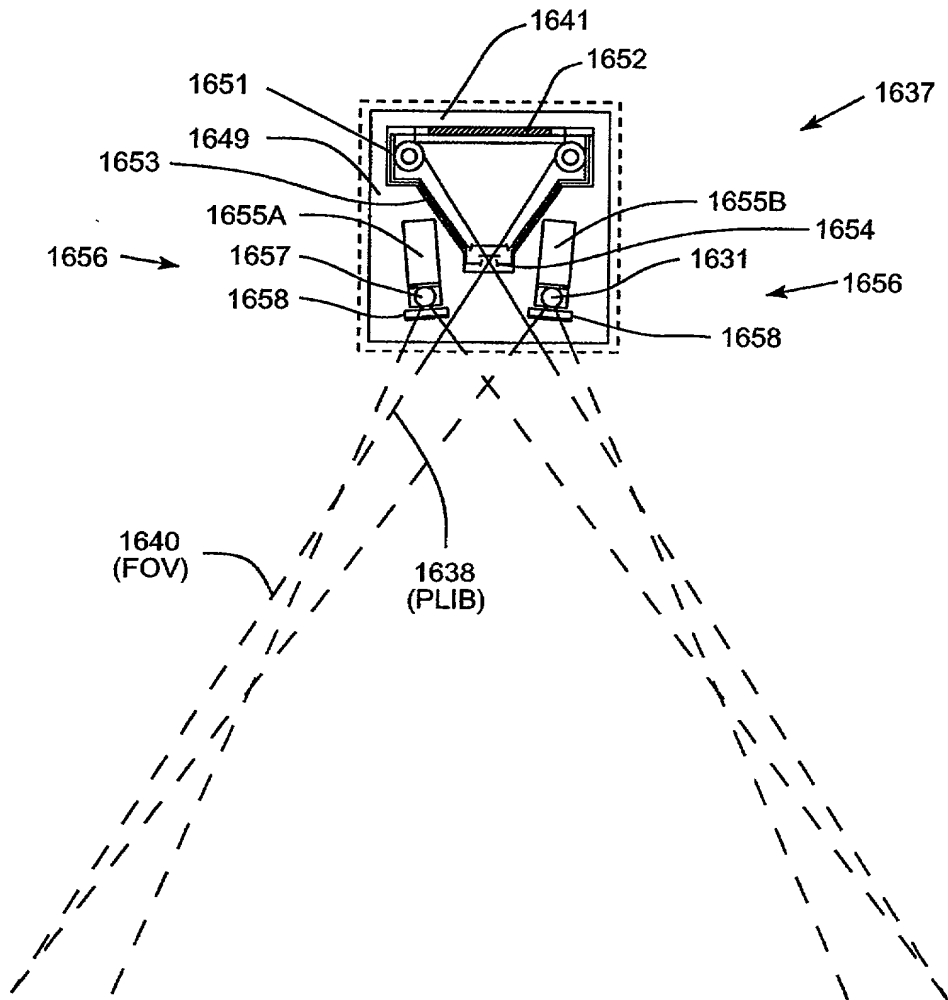


FIG. 45C



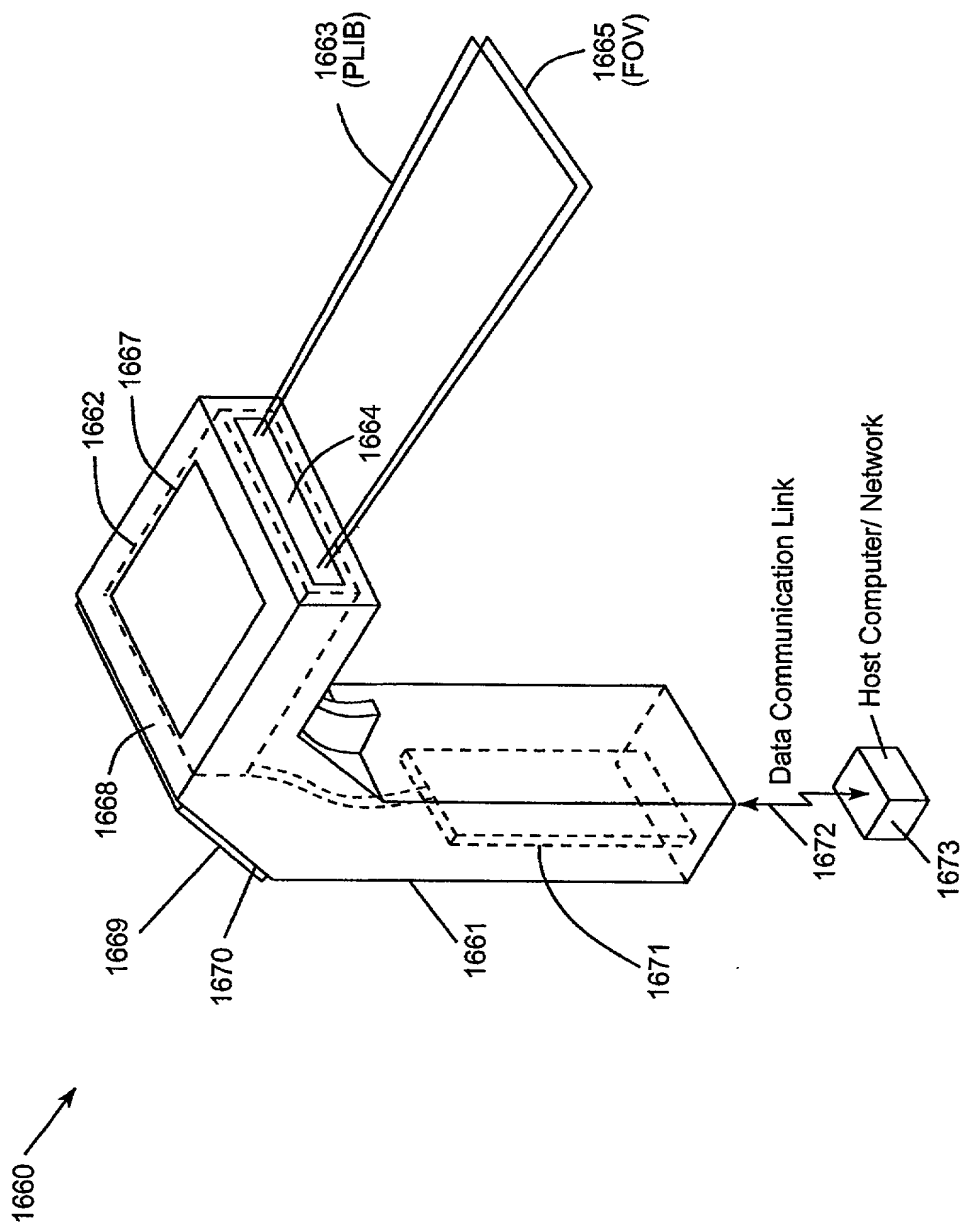
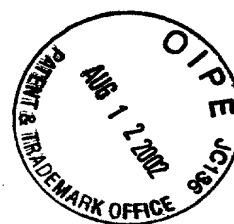


FIG. 46A



2002180" 04T 29001

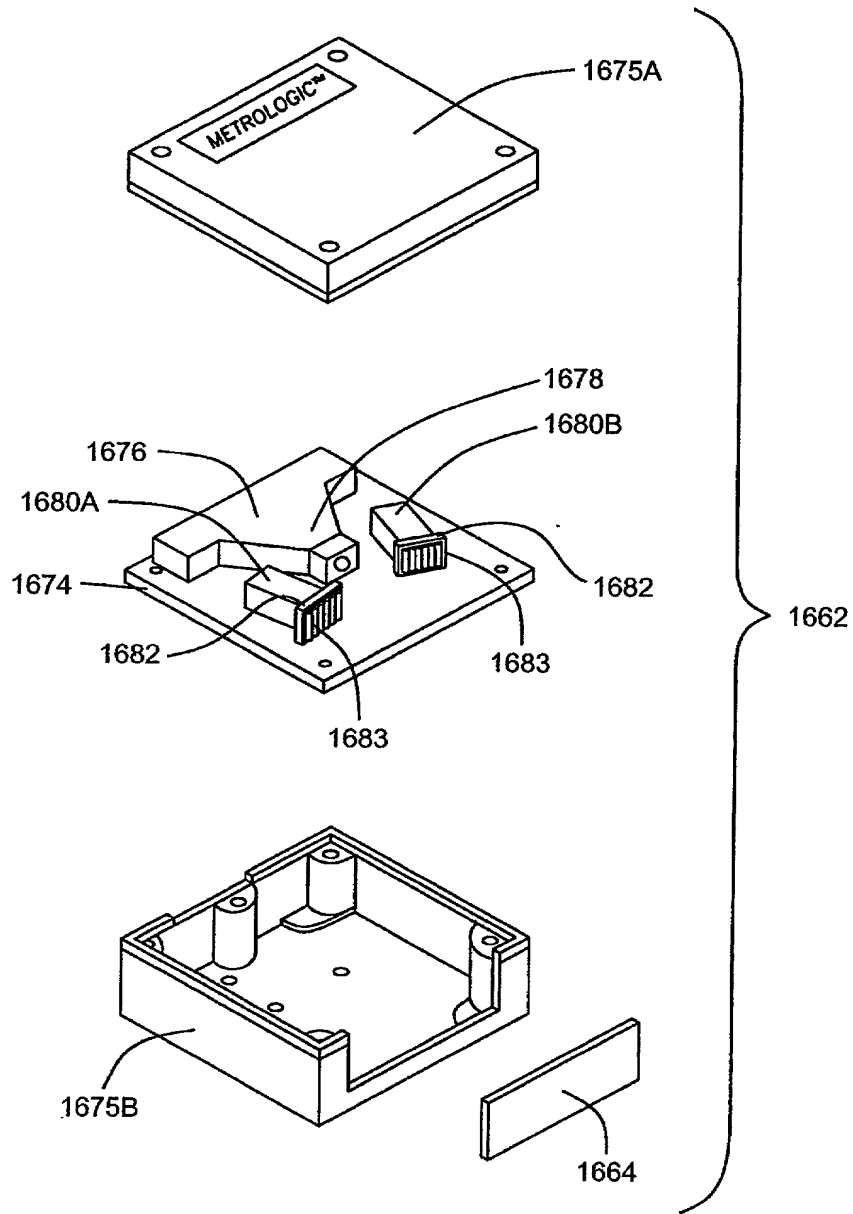


FIG. 46B



20067440.0812001

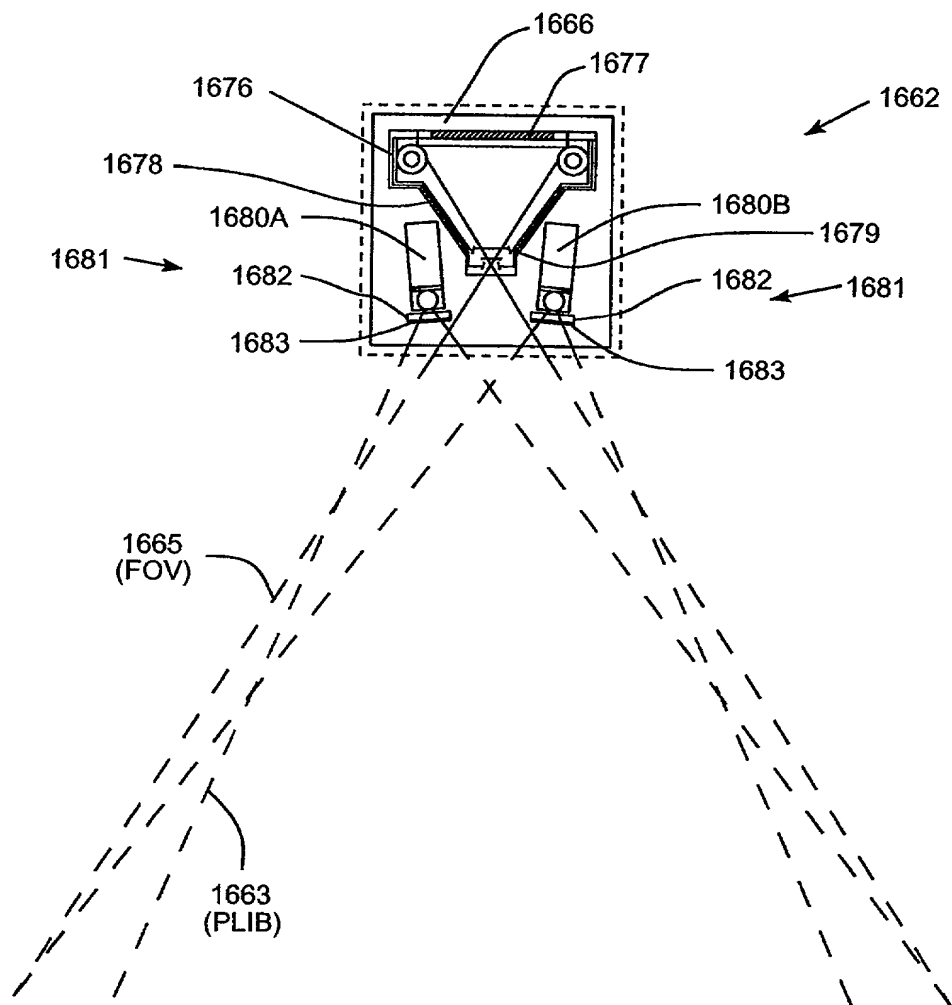


FIG. 46C



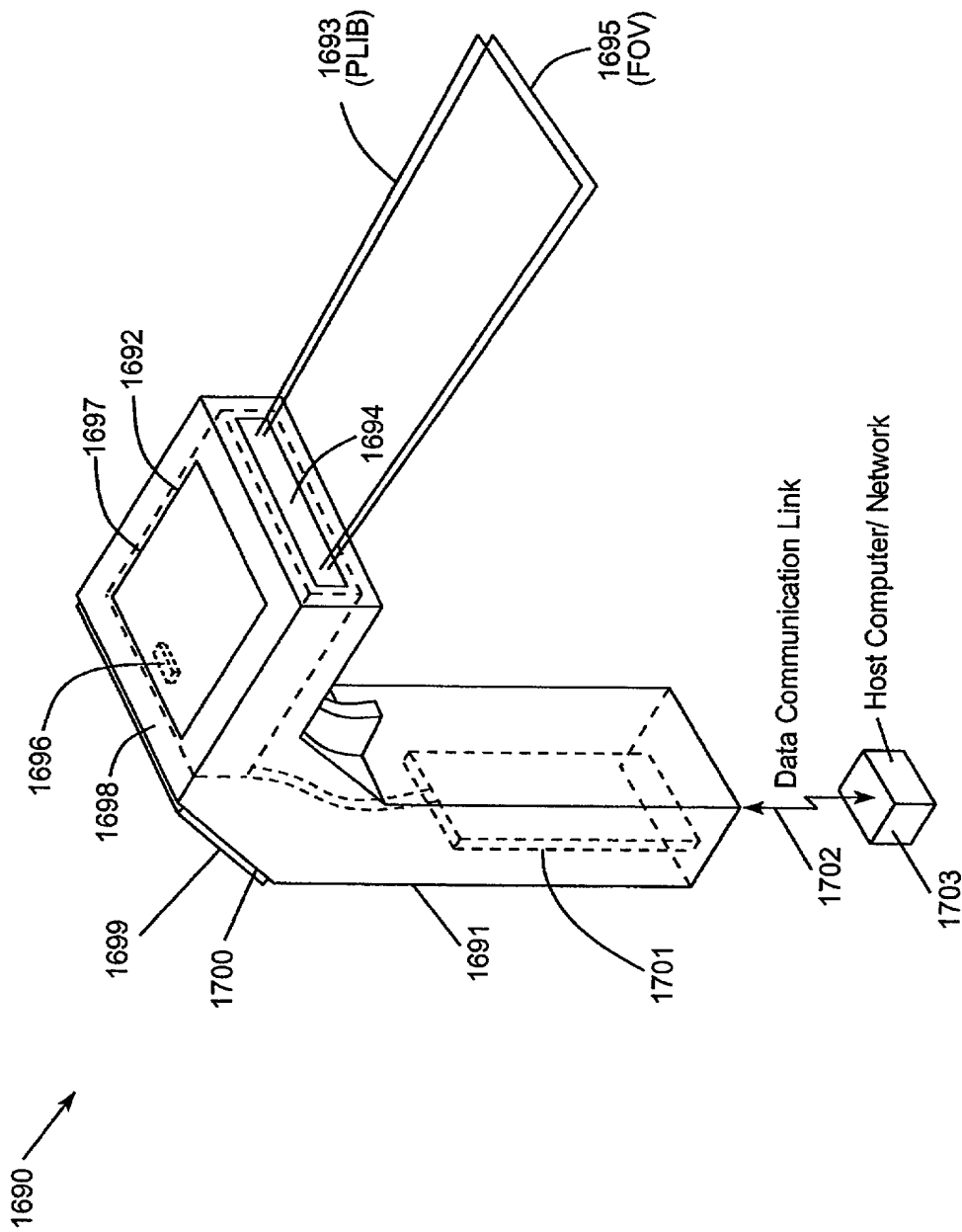


FIG. 47A



202180 04125001

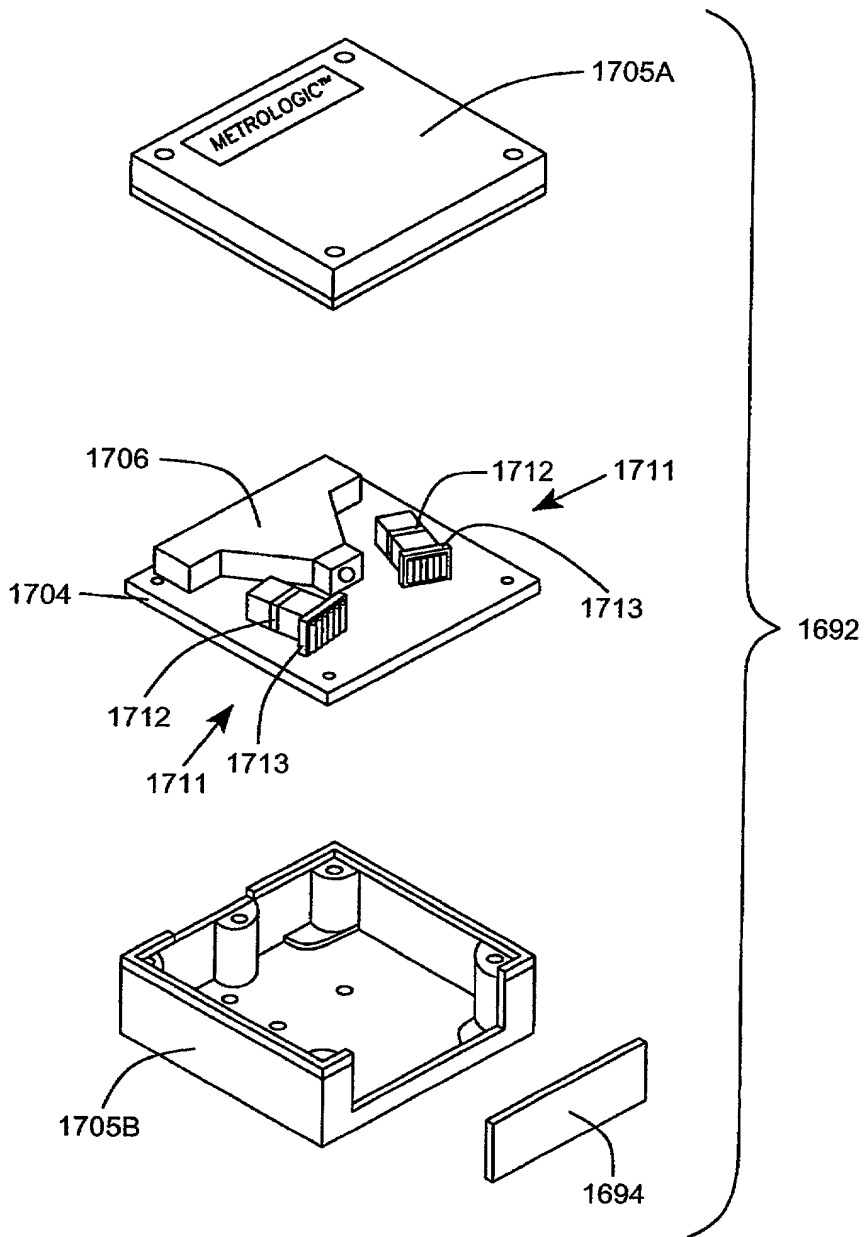


FIG. 47B



2002130-04129001

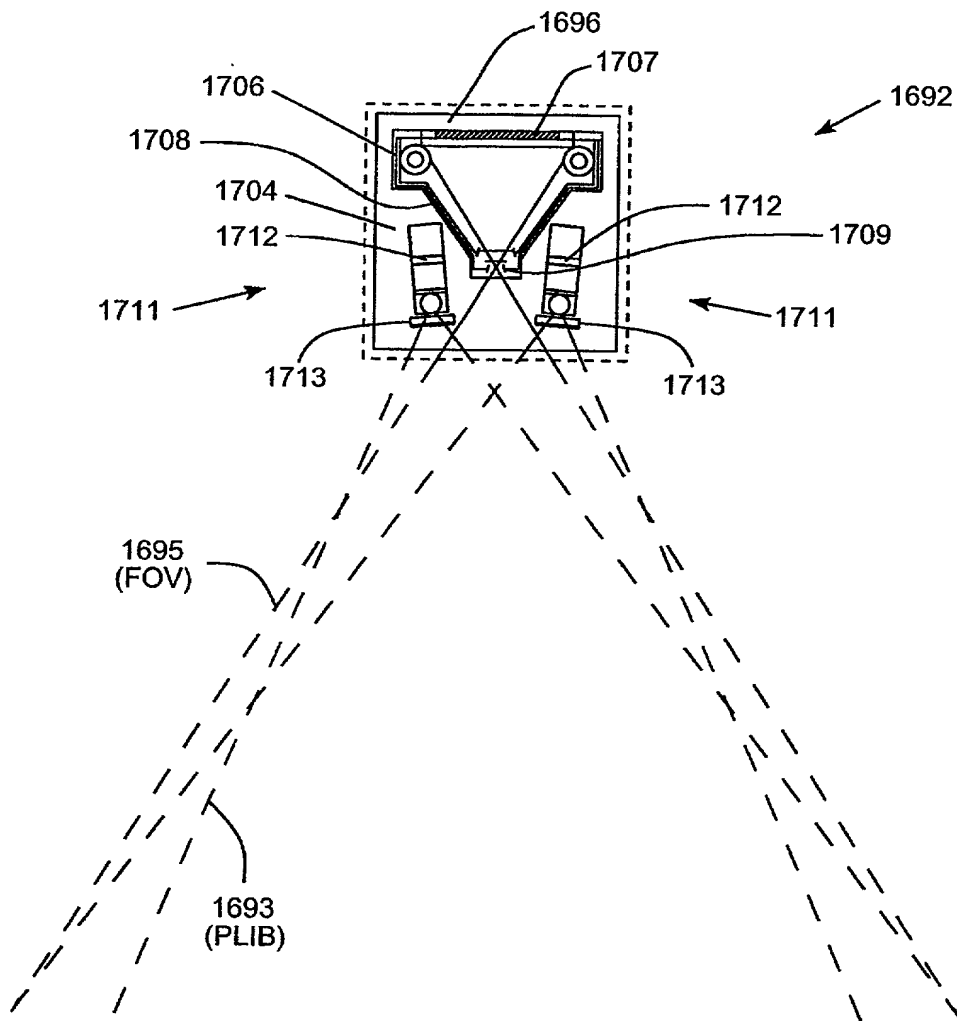


FIG. 47C



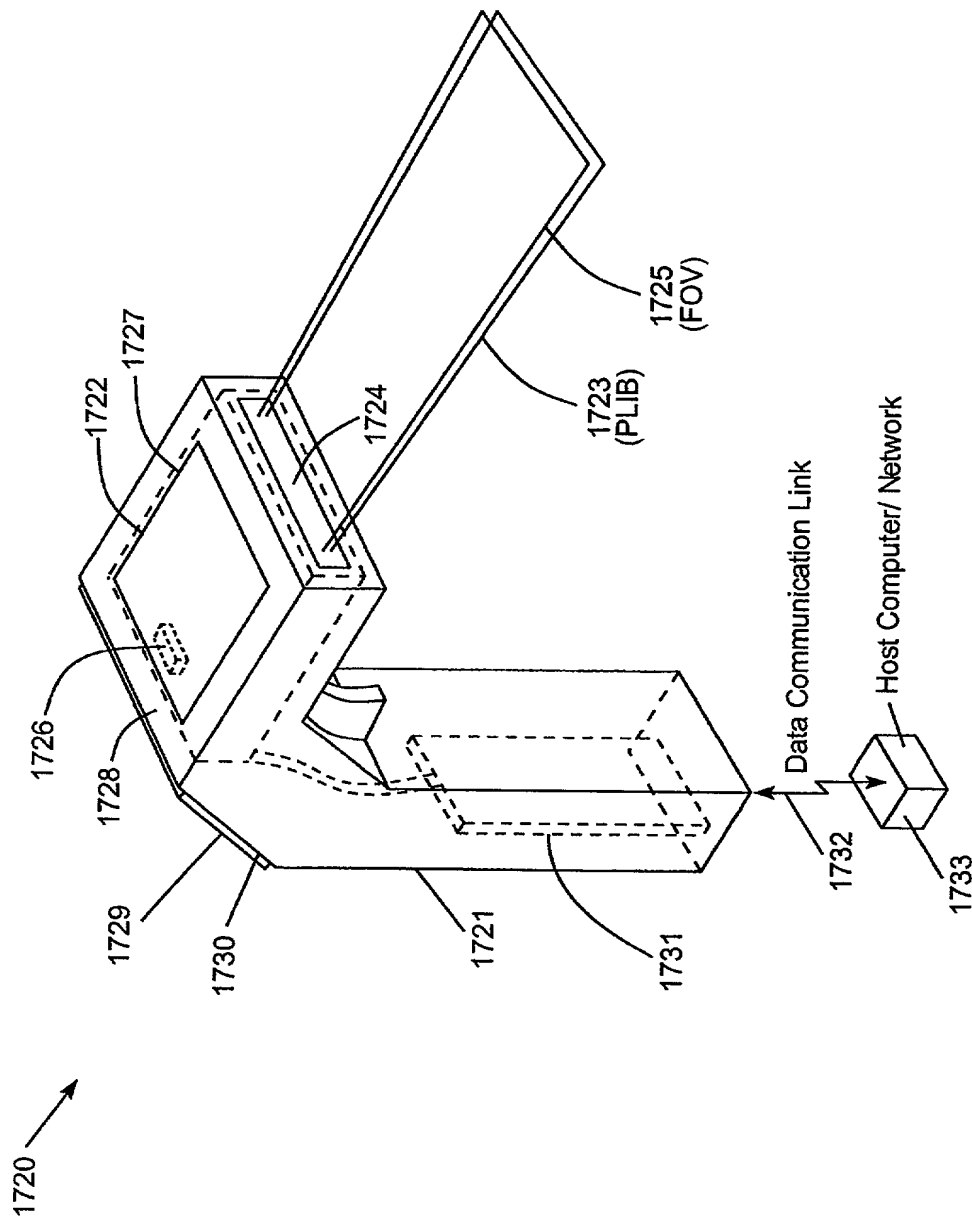


FIG. 48A



2007140-0001

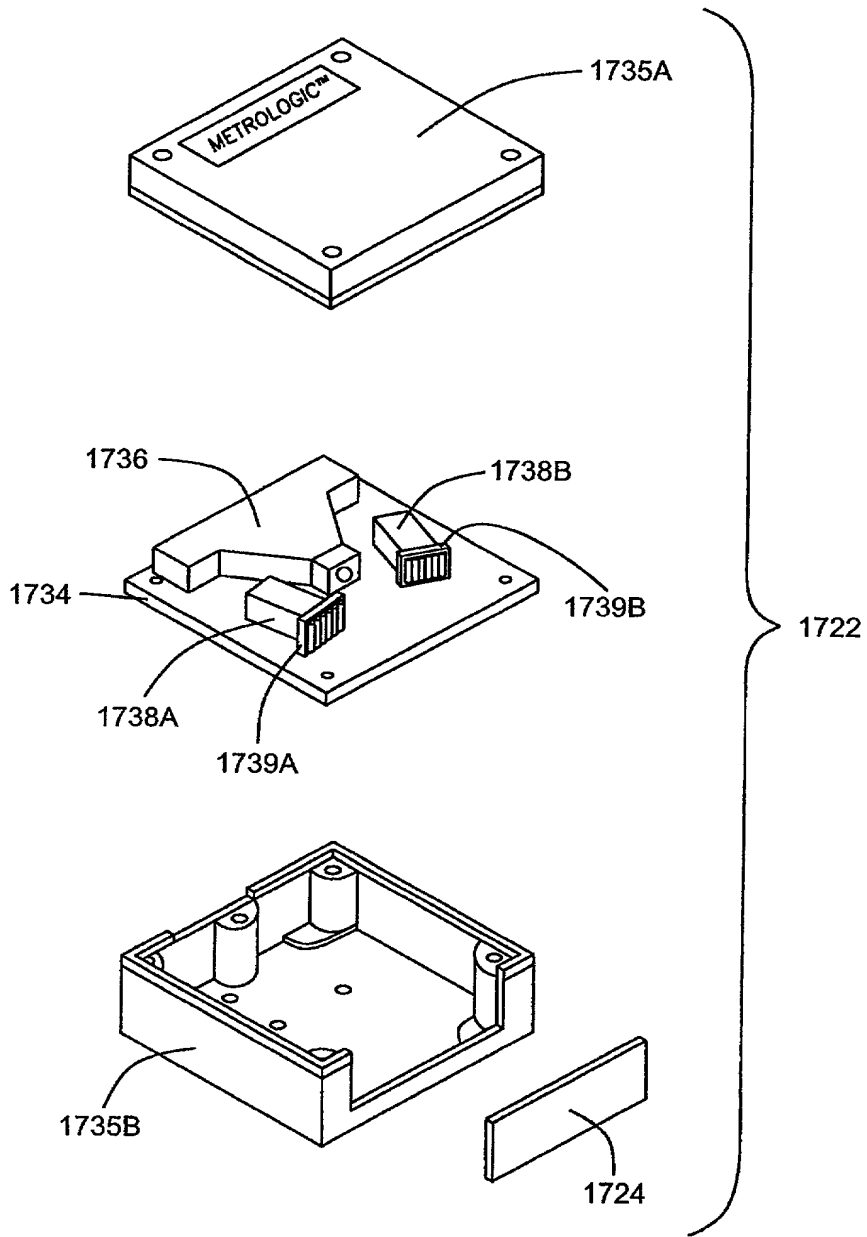
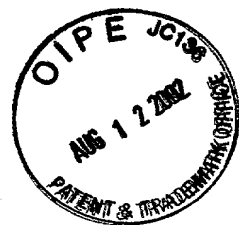


FIG. 48B



A circular stamp from the Office of Intellectual Property (OIPE). The text "OIPE" is at the top, "JUL 1998" is at the top right, "AUG 12 2002" is in the center, and "PATENT & TRADEMARK OFFICE" is at the bottom.

Exploded perspective view of the SIMF assembly 1742. The assembly includes a top cover 1735A with a METROLOGIC™ label, a base 1735B, and a central component 1754. The central component 1754 features a SIMF (Surface Mount Interconnect Feature) with two connectors, 1760A and 1760B, each having pins 1762 and 1763. A small component 1759 is also shown. A separate component 1744 is shown below the base 1735B.

A circular black and white stamp. The text "OIP" is at the top, "JG:139" is at the top right. The date "AUG 12 2002" is in the center. The text "PATENT & TRADEMARK" is at the bottom.

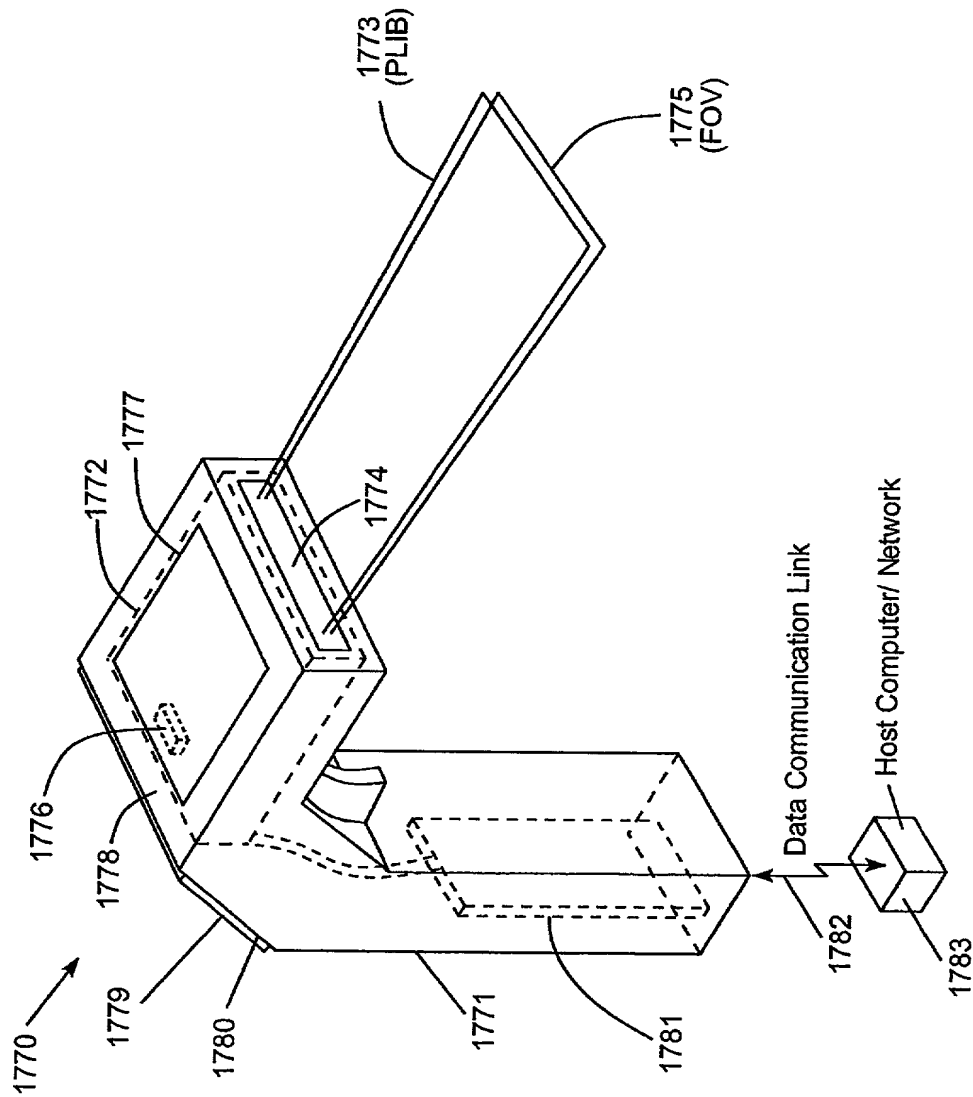
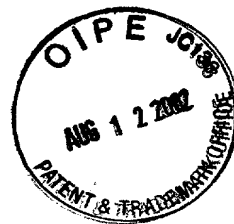


FIG. 50A



20020801 001 29001

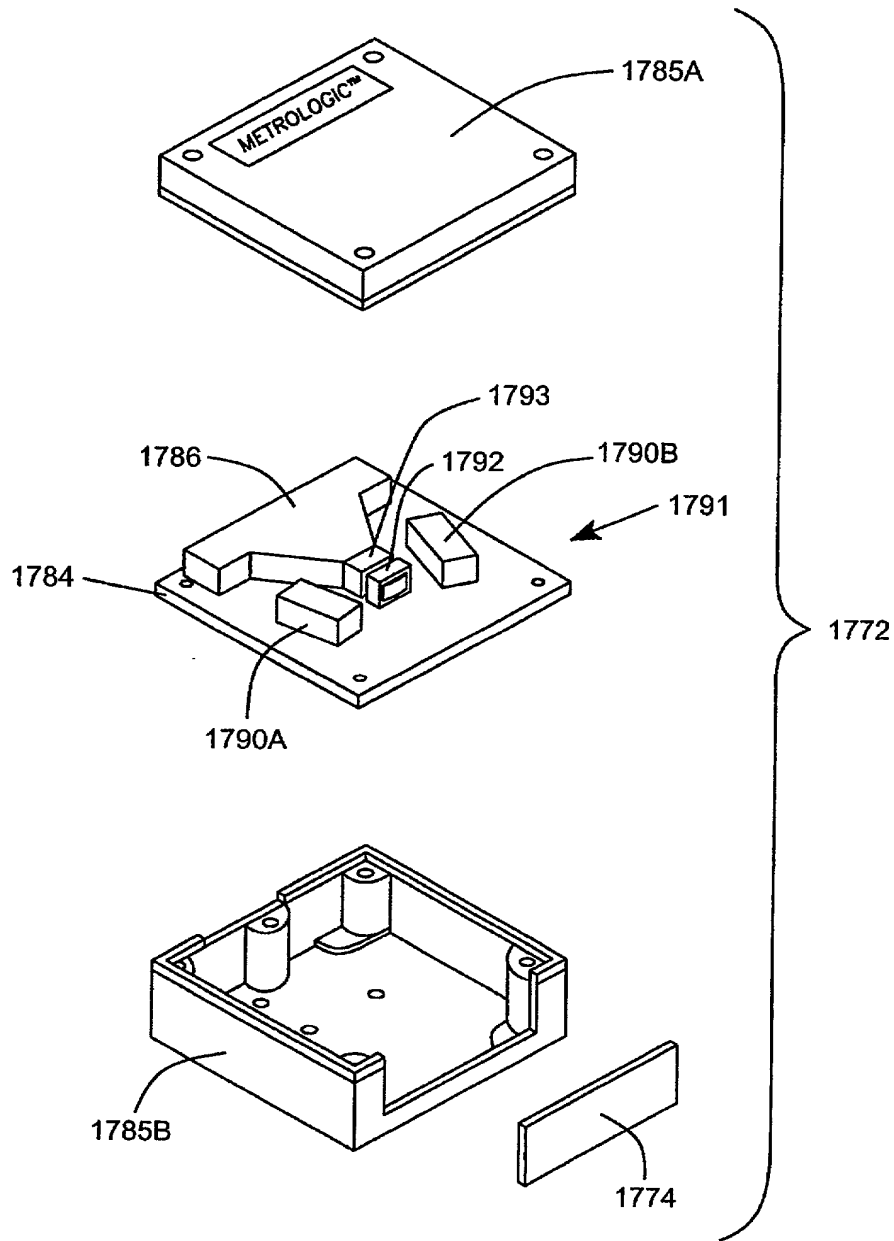
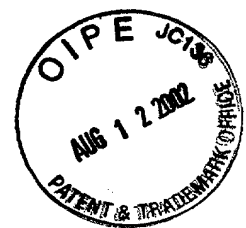


FIG. 50B



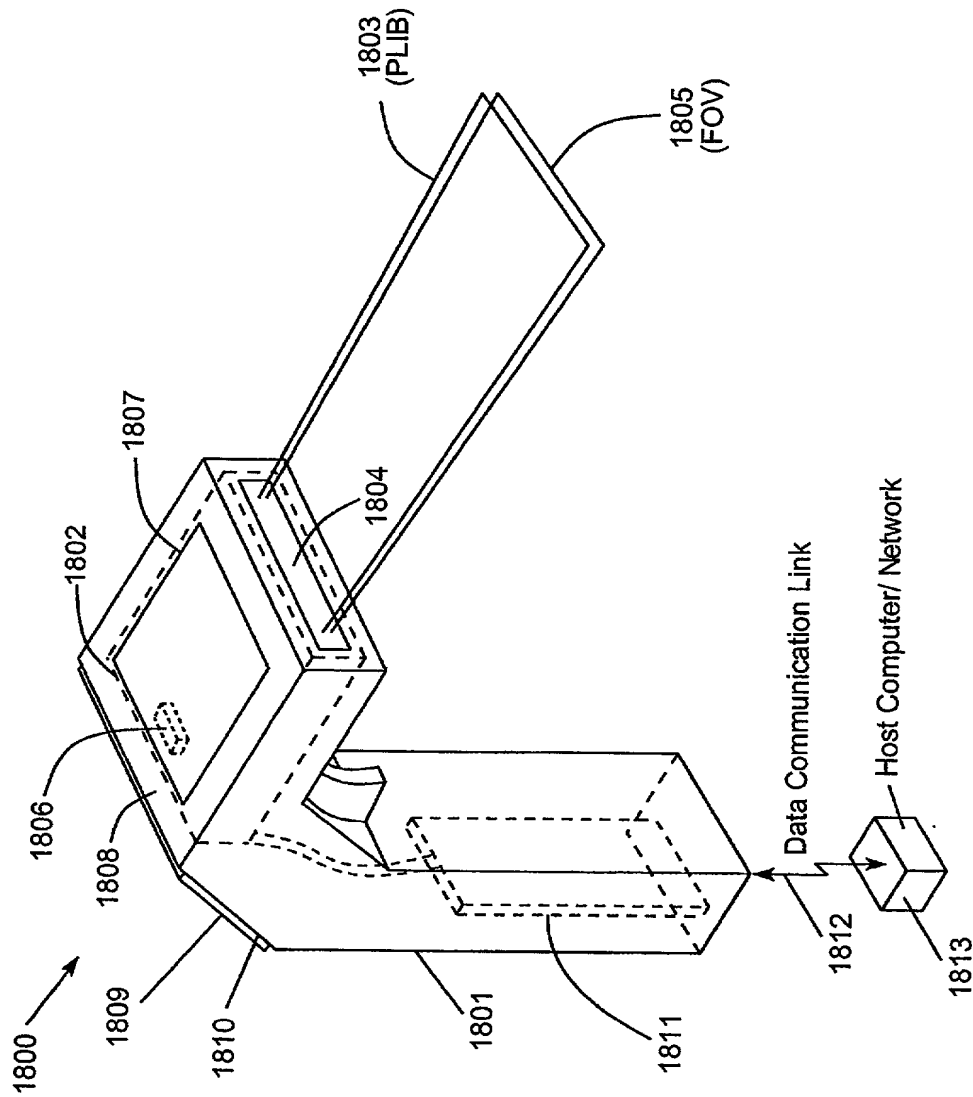


FIG. 51A



202720-04129001

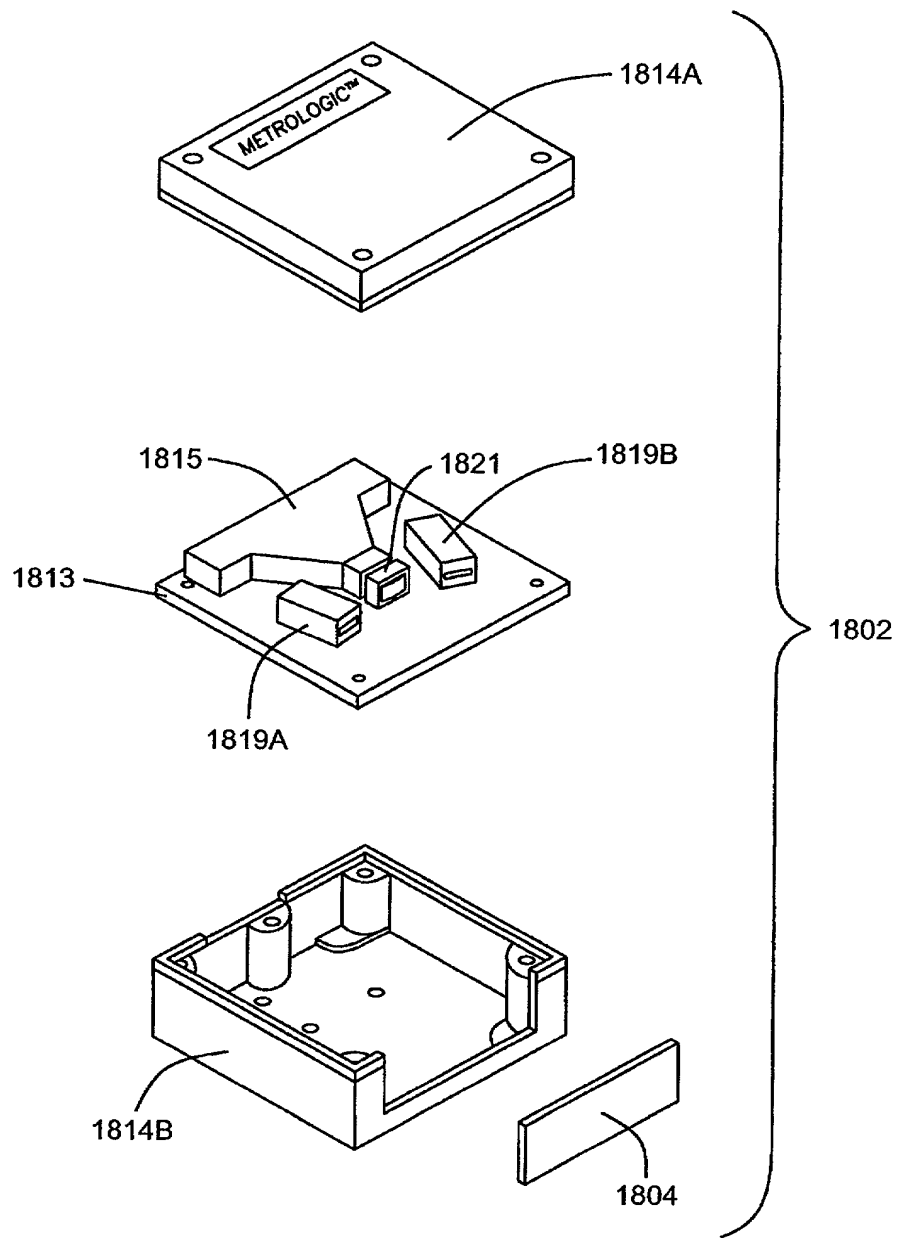


FIG. 51B



2006/04/29

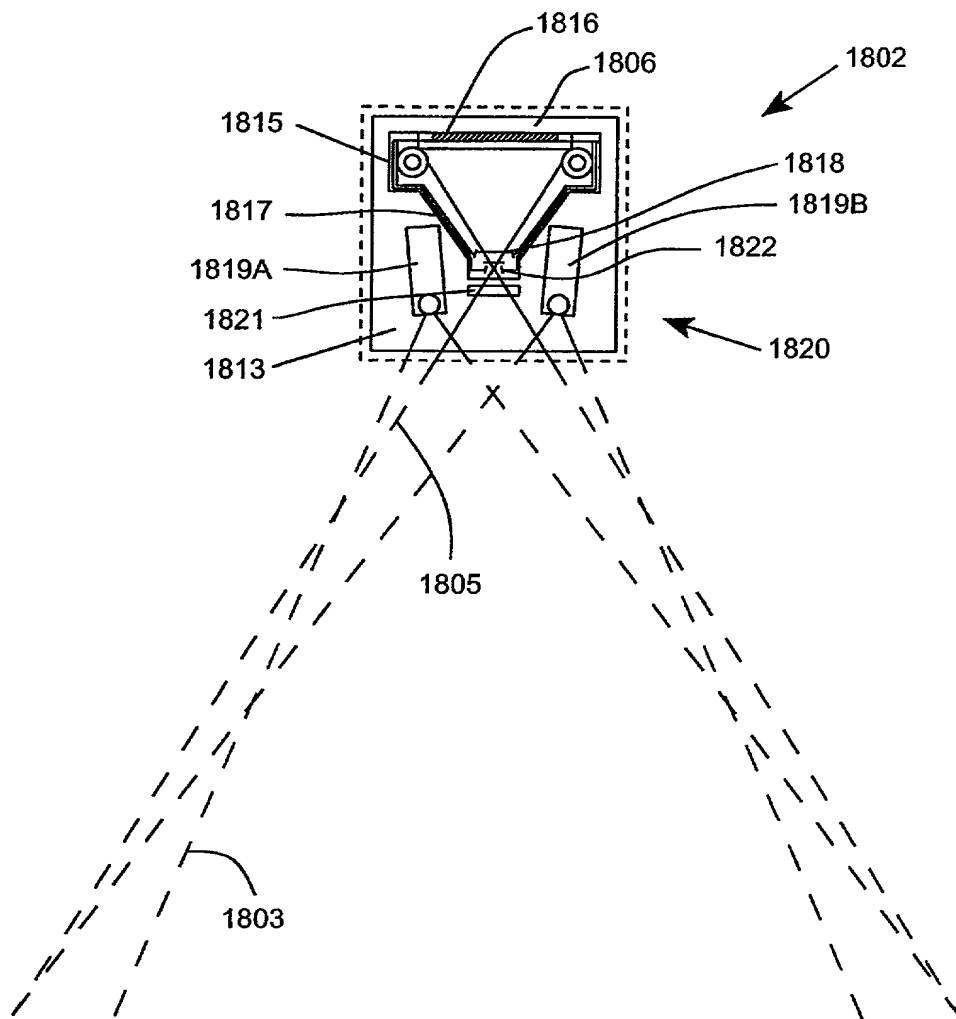
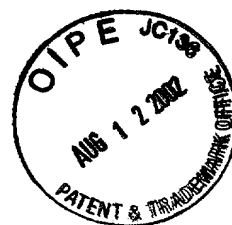


FIG. 51C



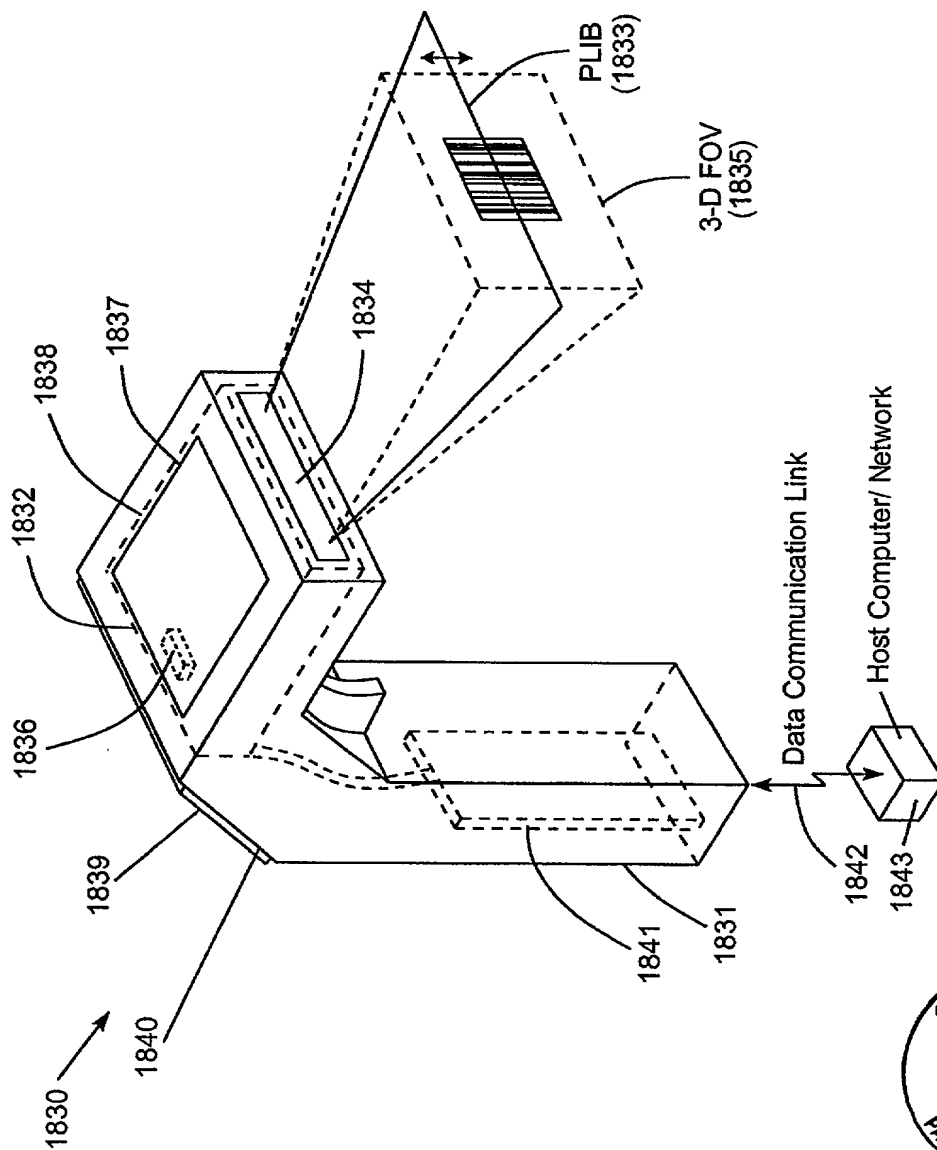


FIG. 52A



20020701 04123001

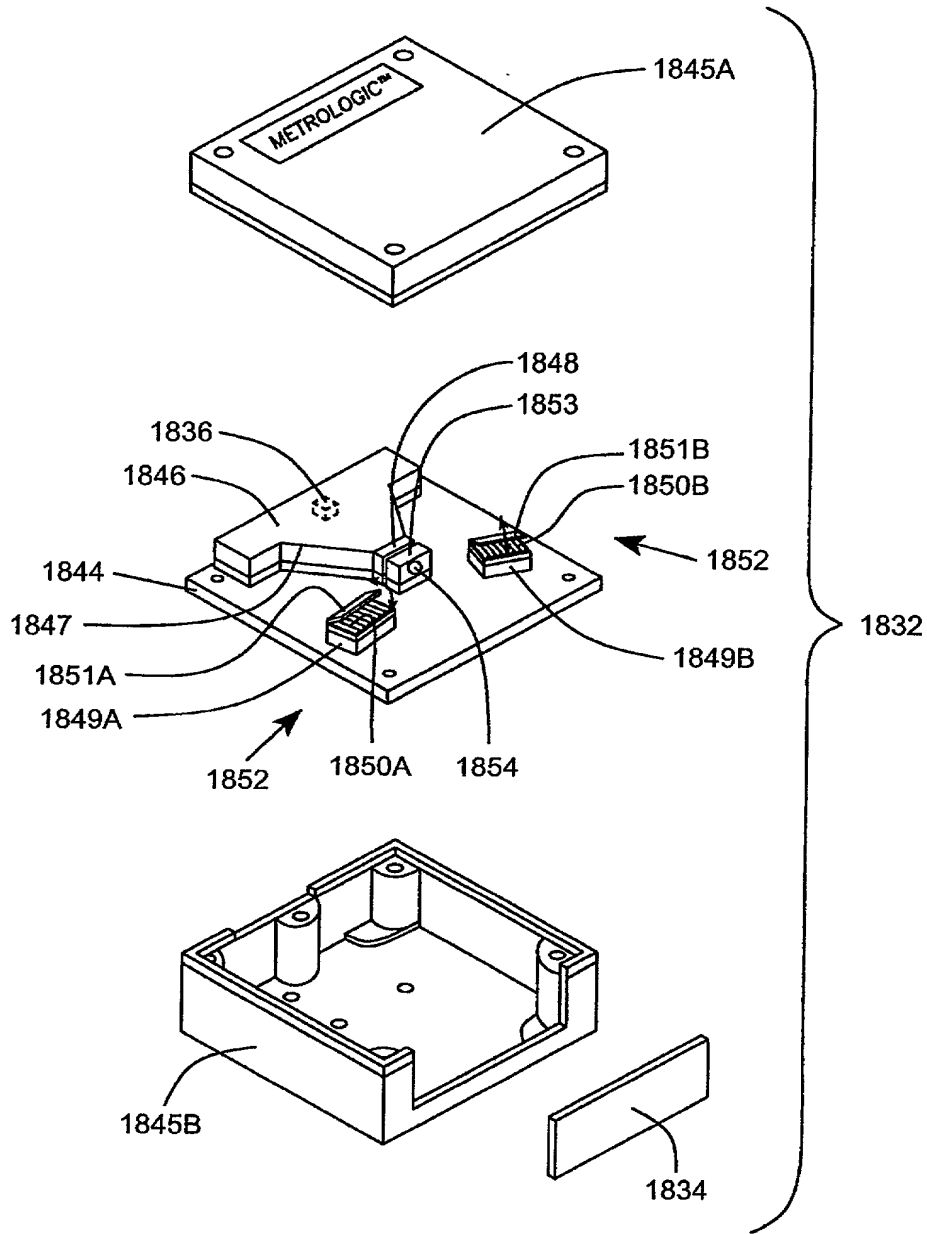


Fig. 113A-3B

FIG. 52B



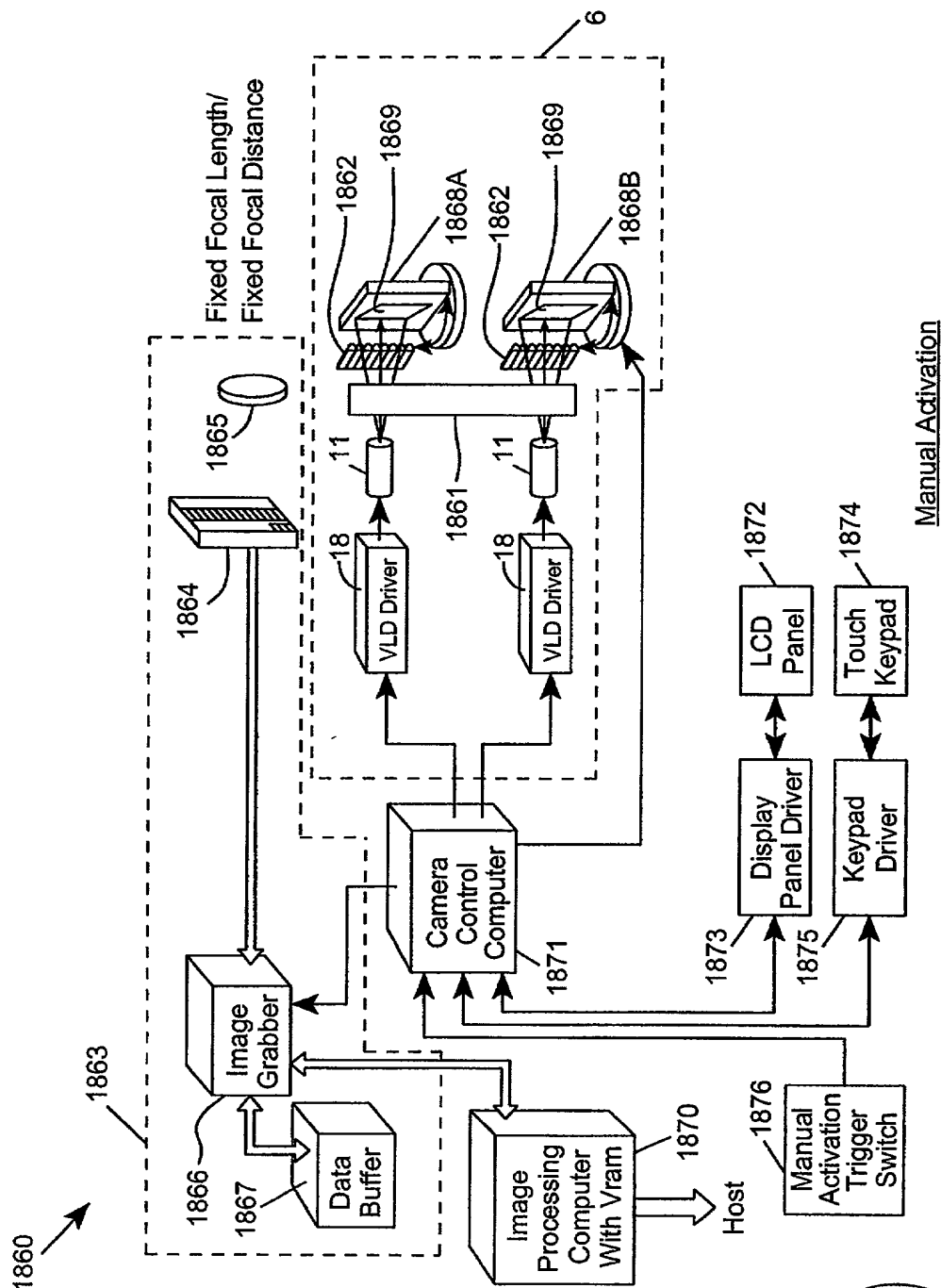


FIG. 53A1



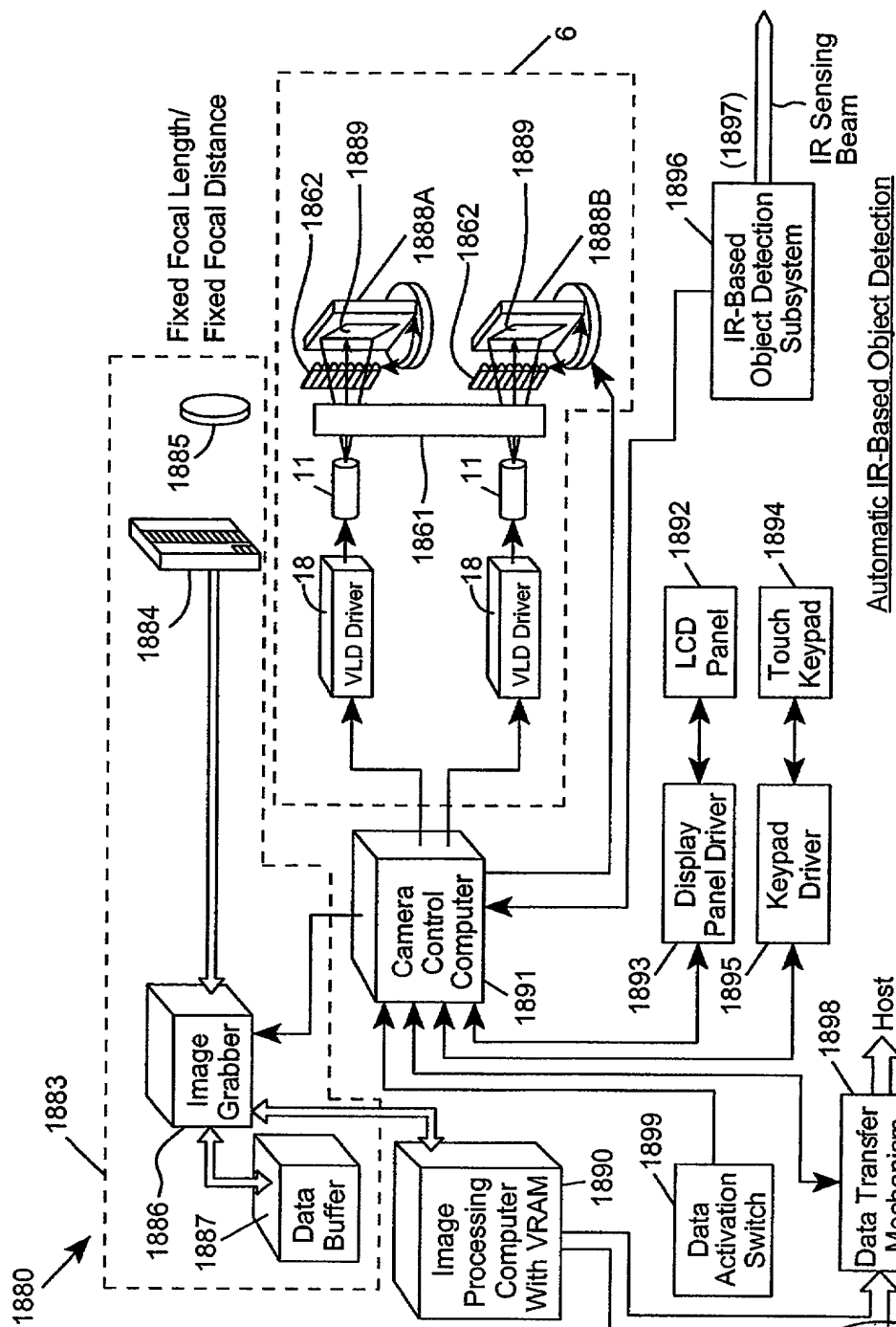
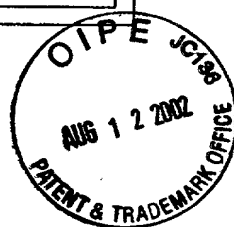


FIG. 53A2



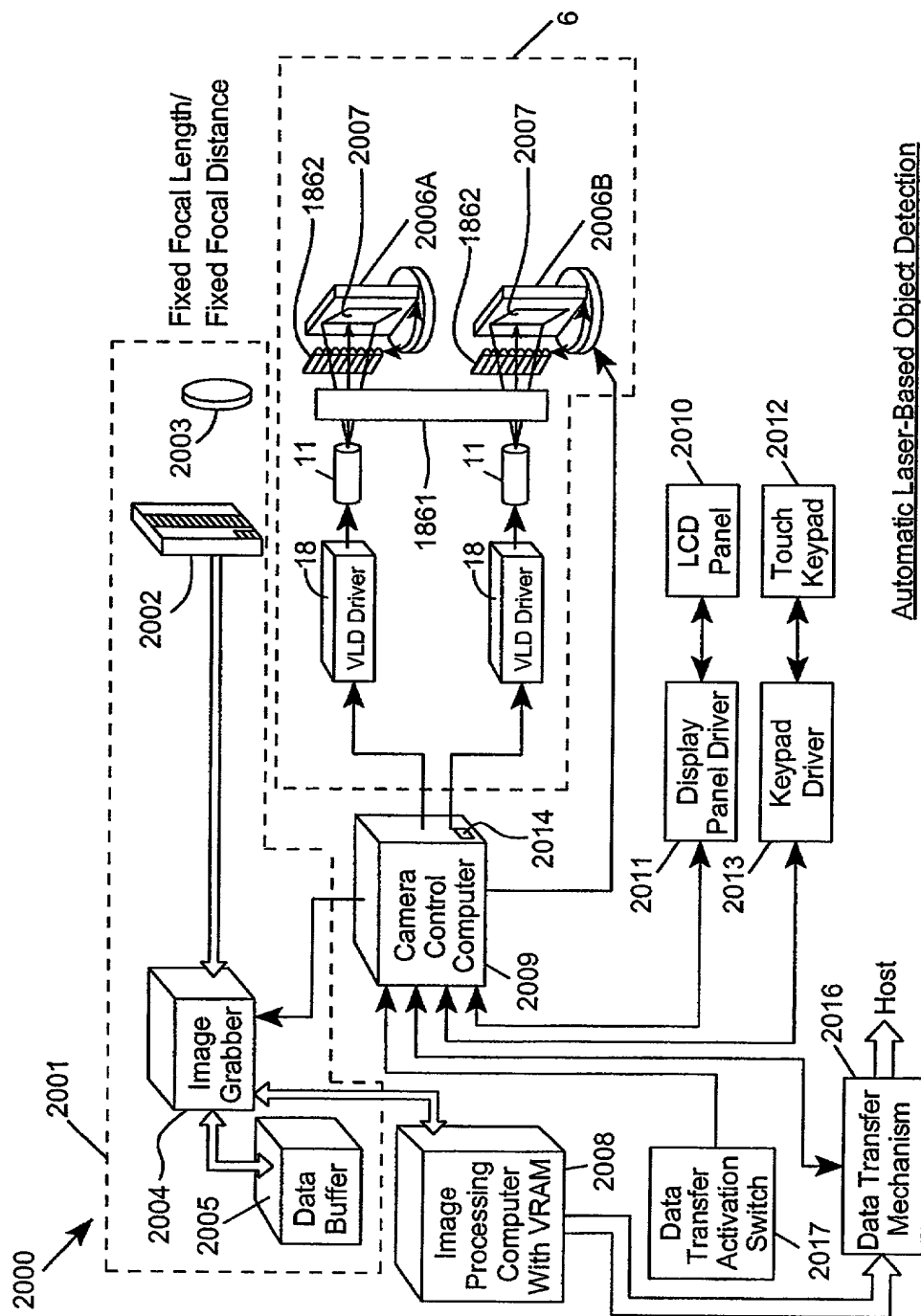


FIG. 53A3



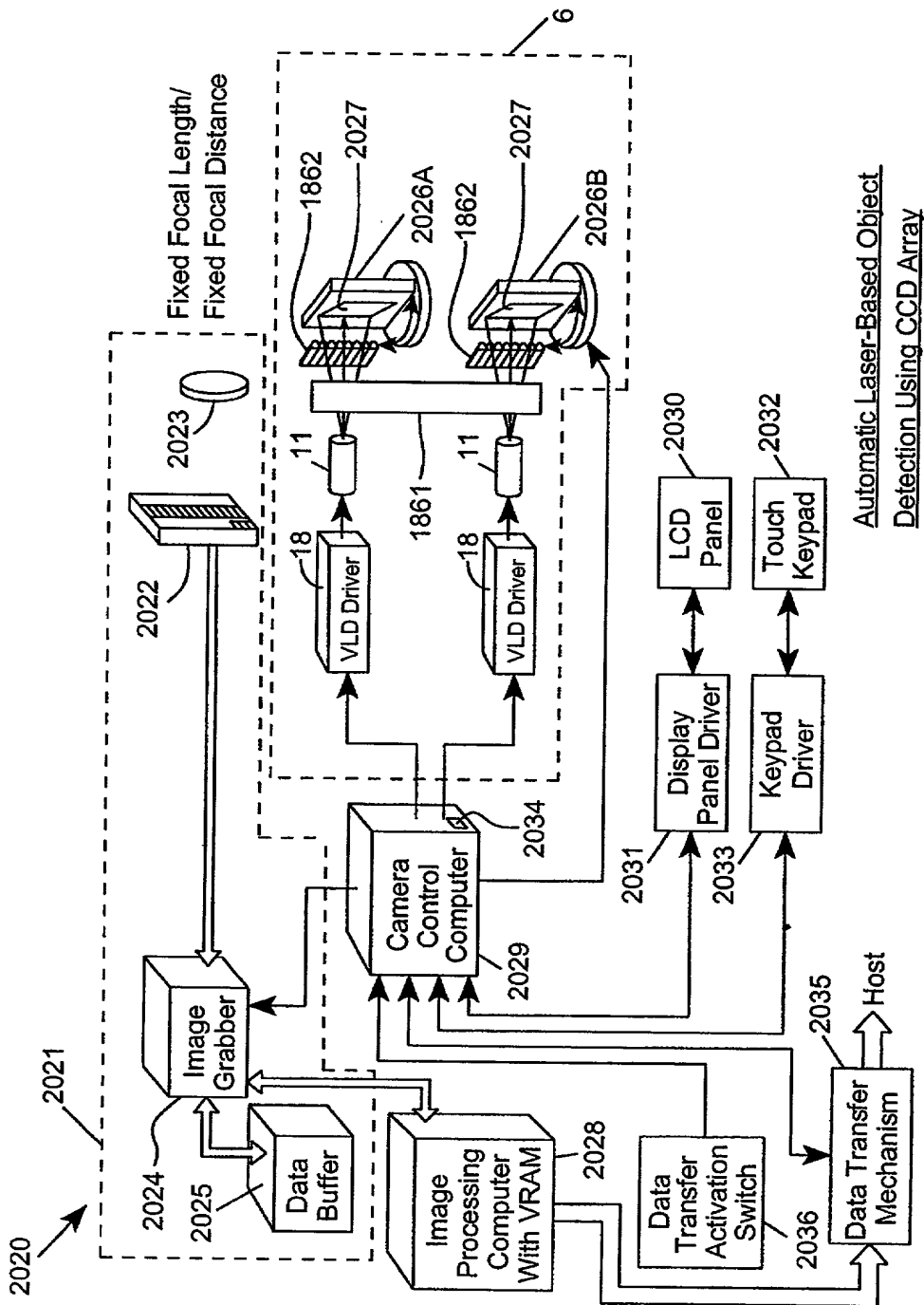


FIG. 53A4



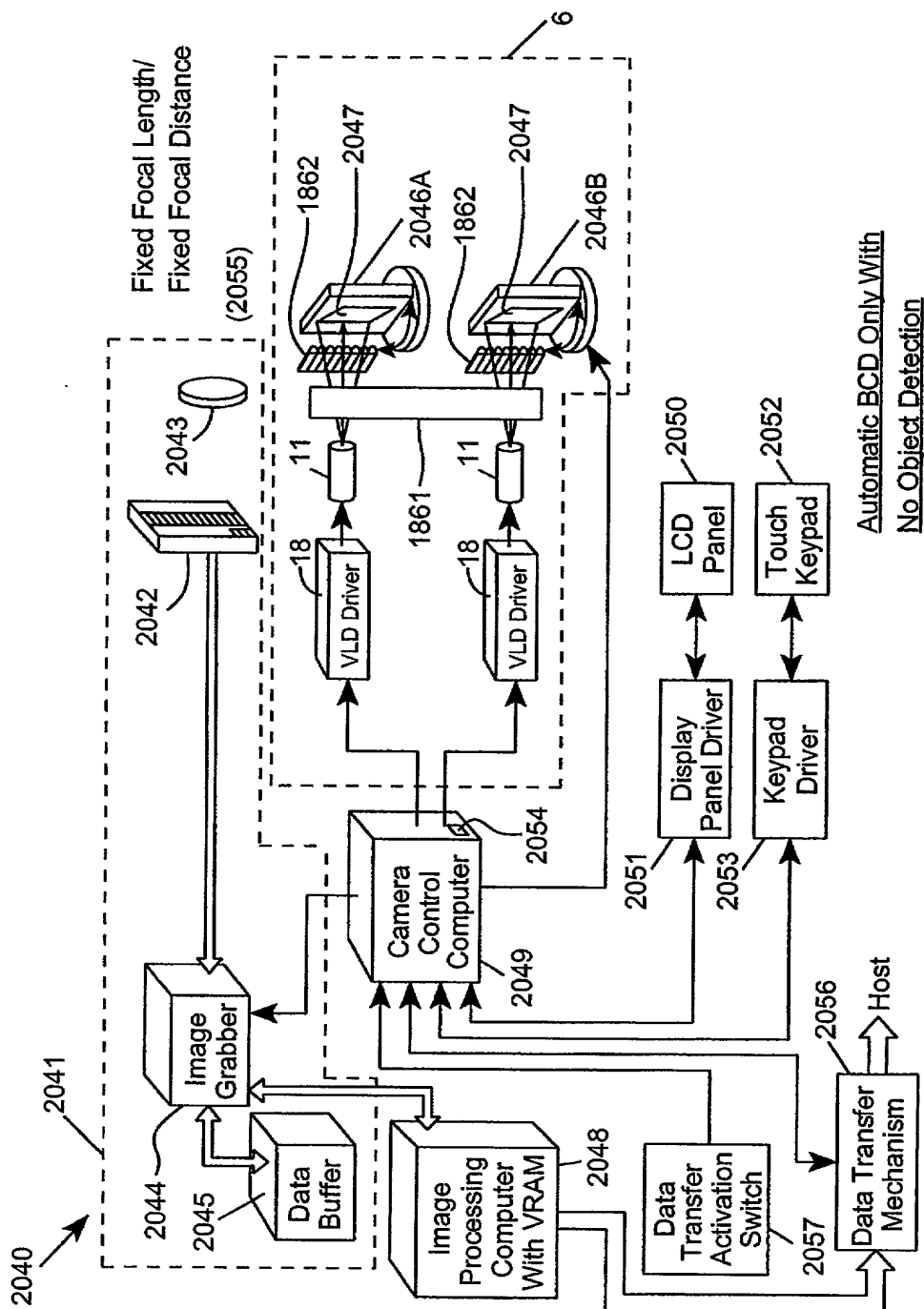
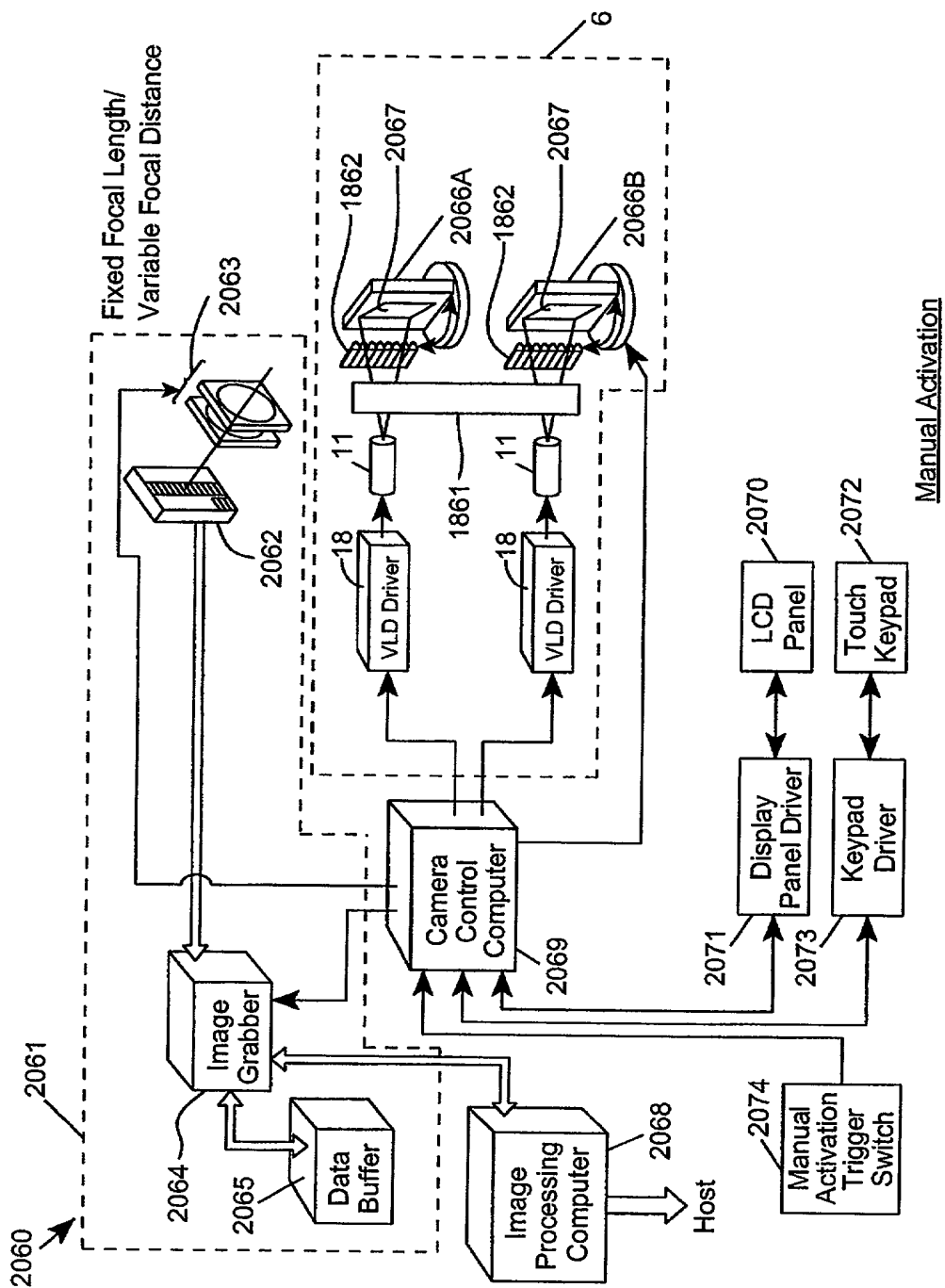
[illegible]

FIG. 53A5





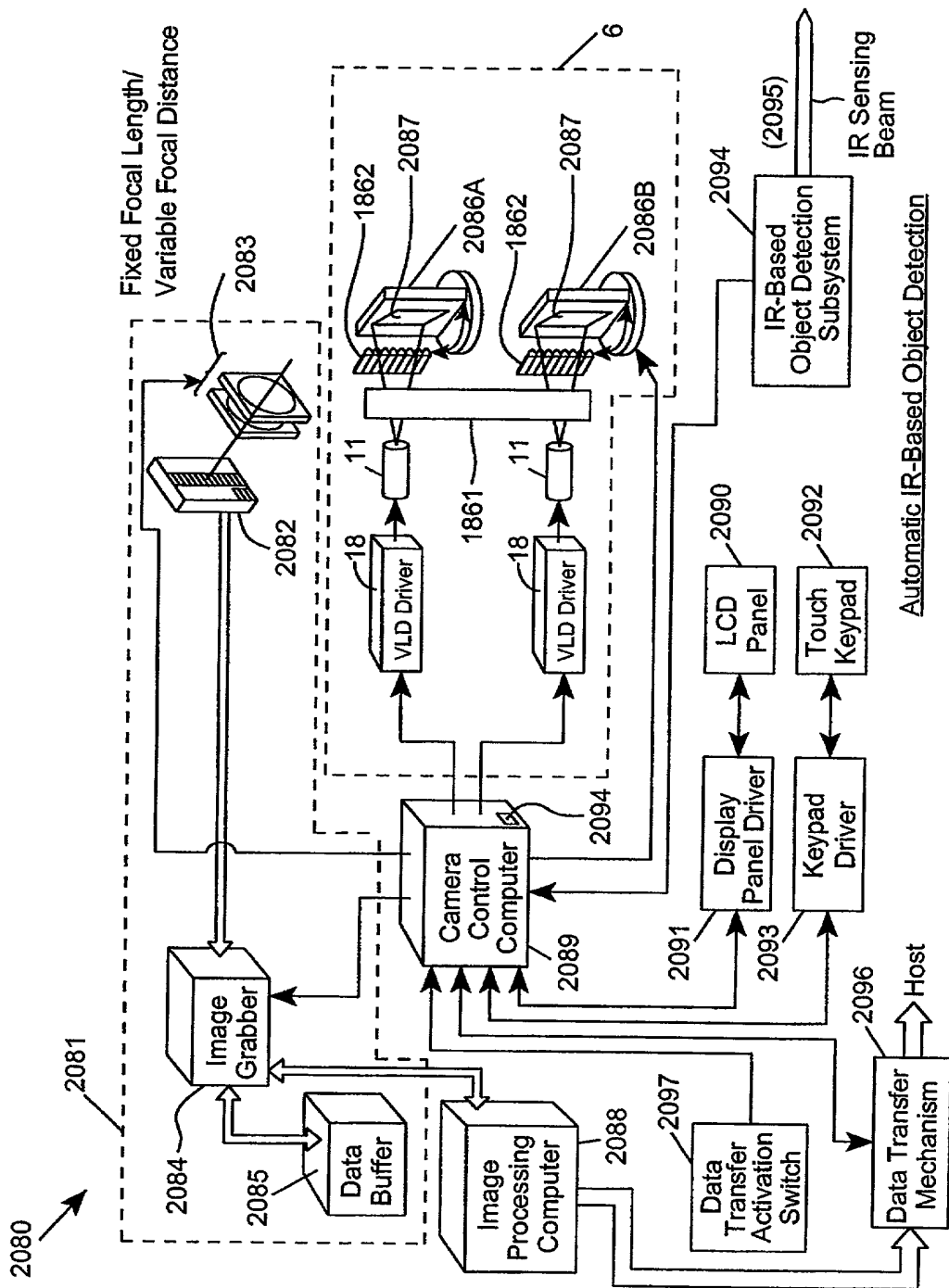


FIG. 53B2



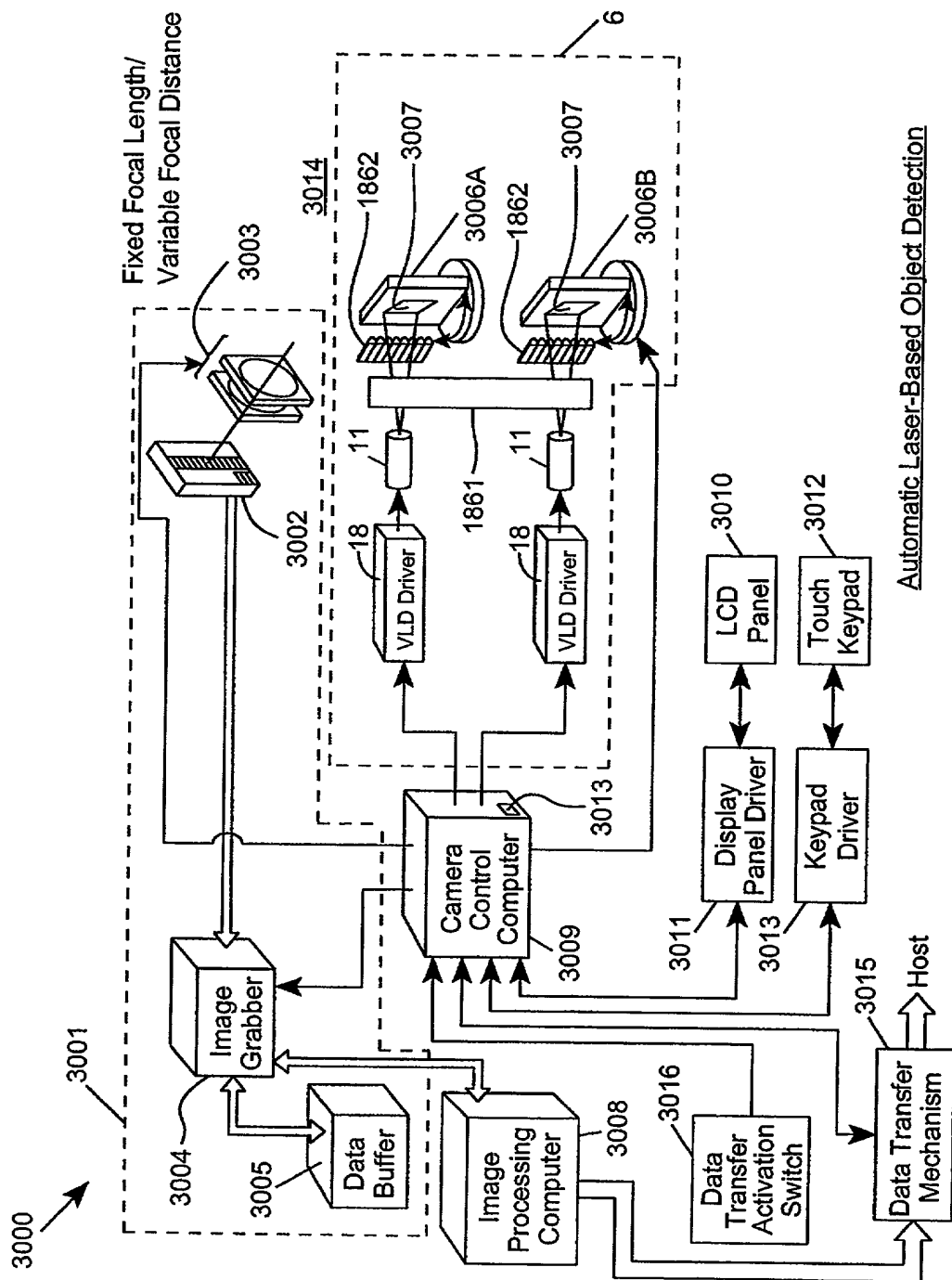


FIG. 53B3



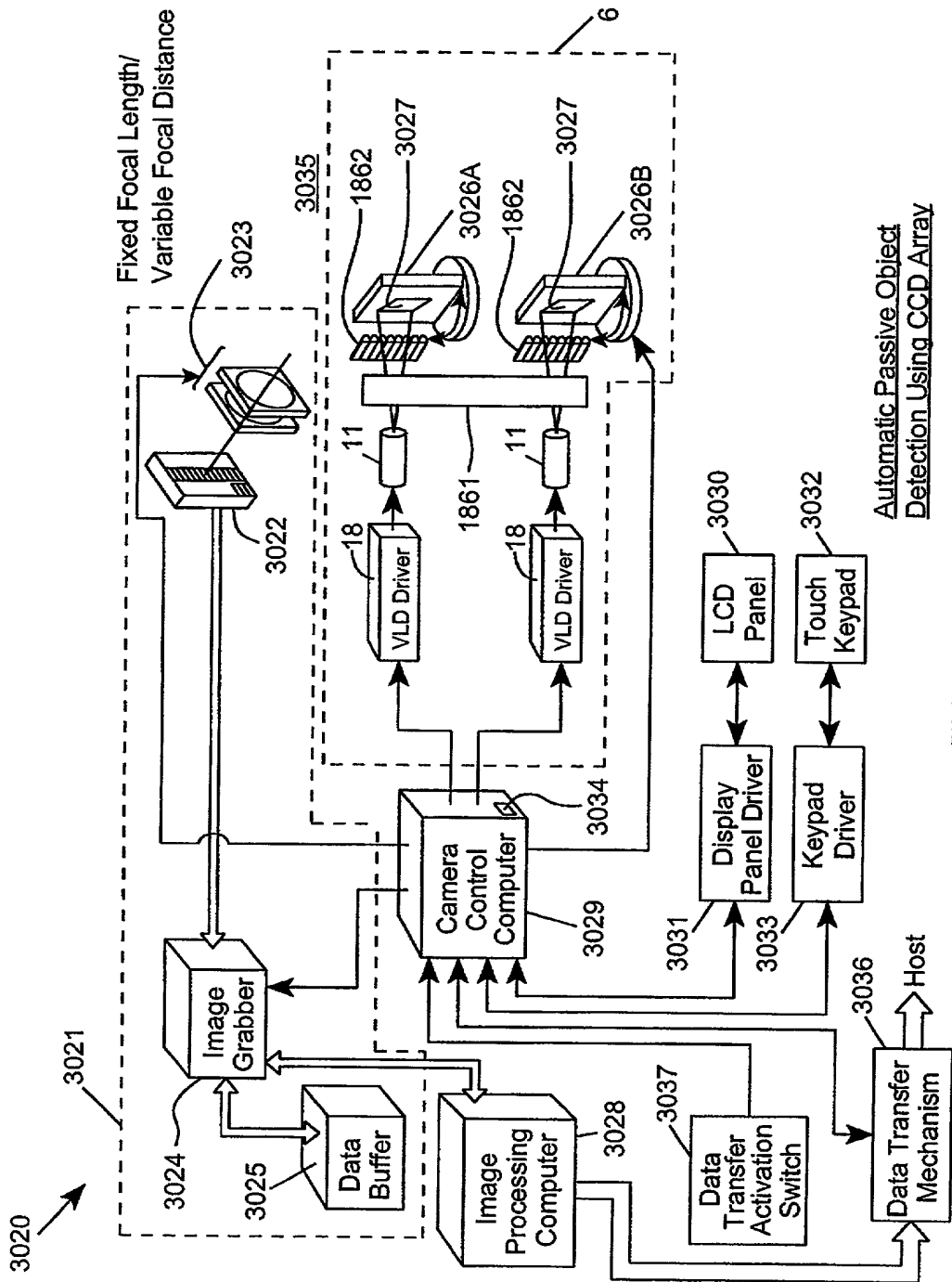
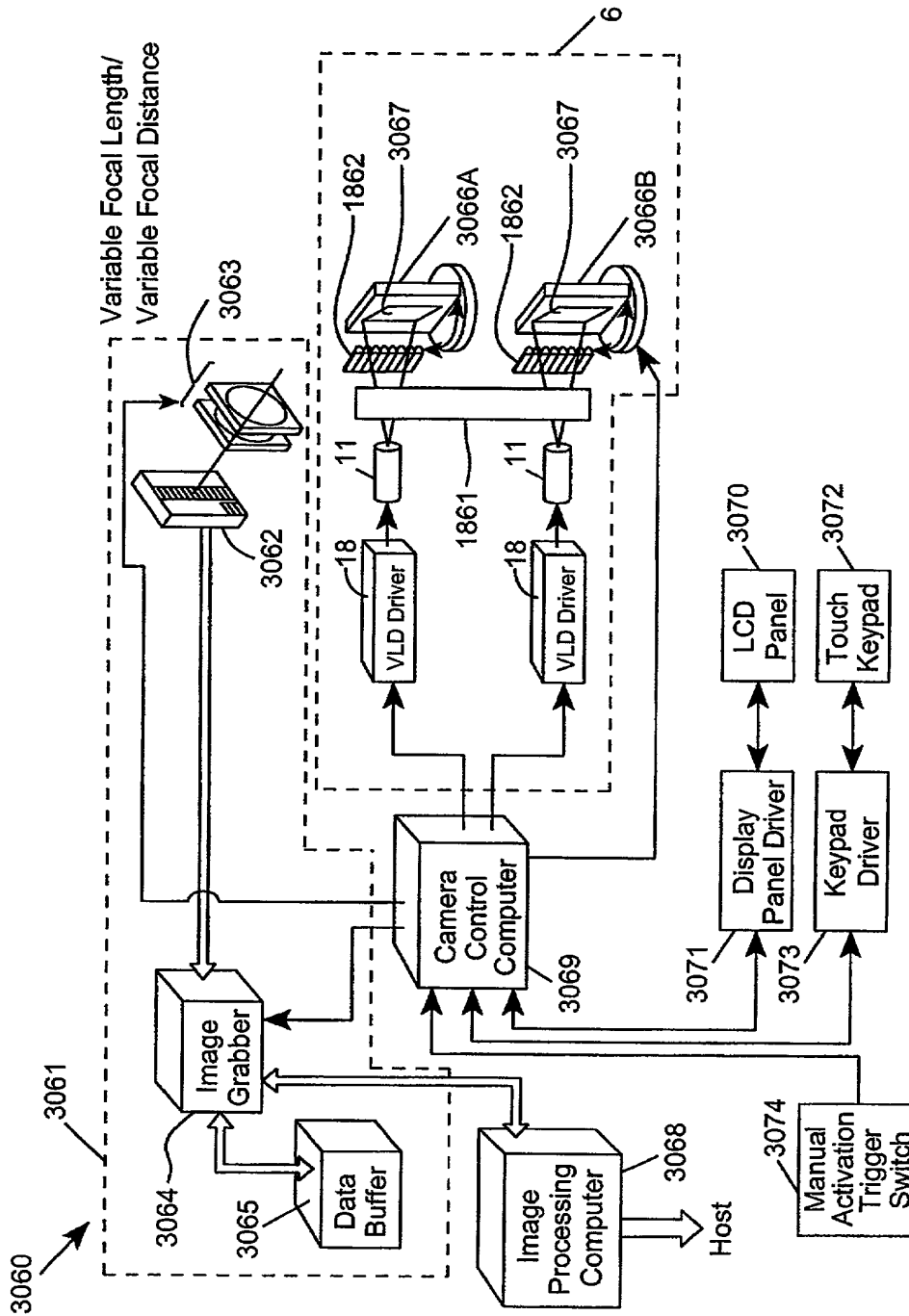


FIG. 53B4





Manual Activation

FIG. 53C1



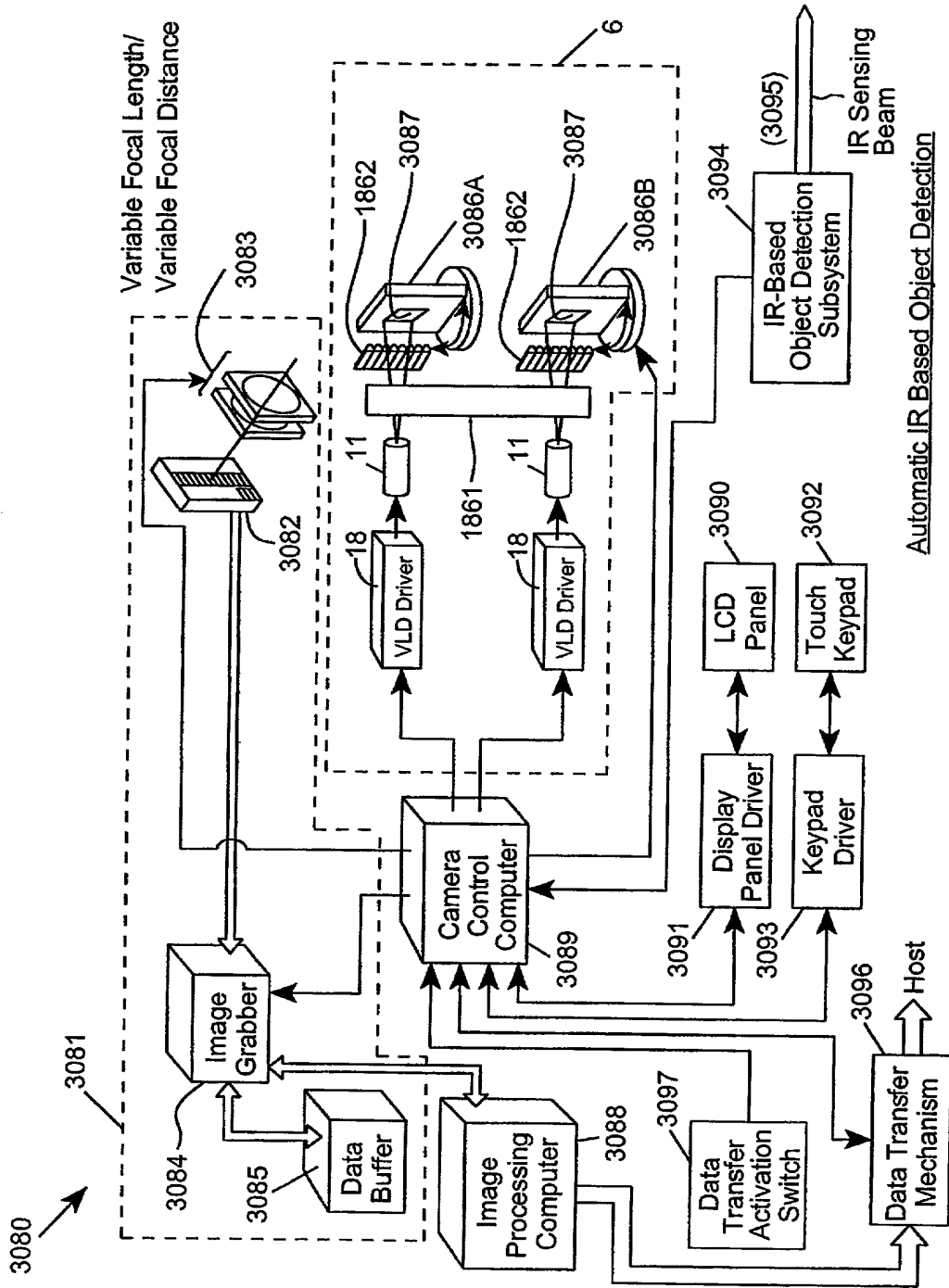
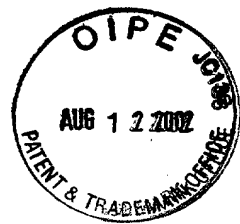


FIG. 53C2



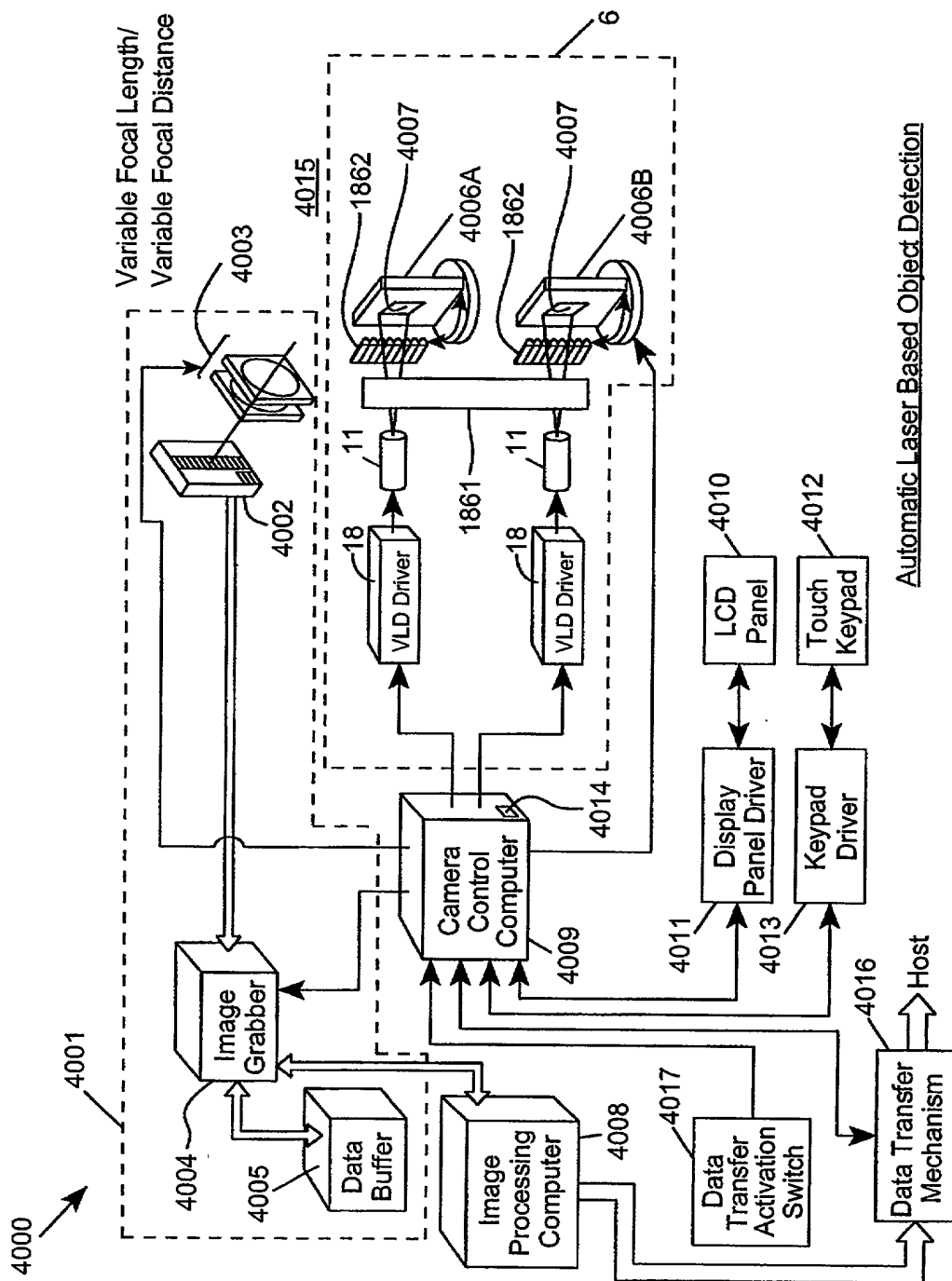


FIG. 53C3



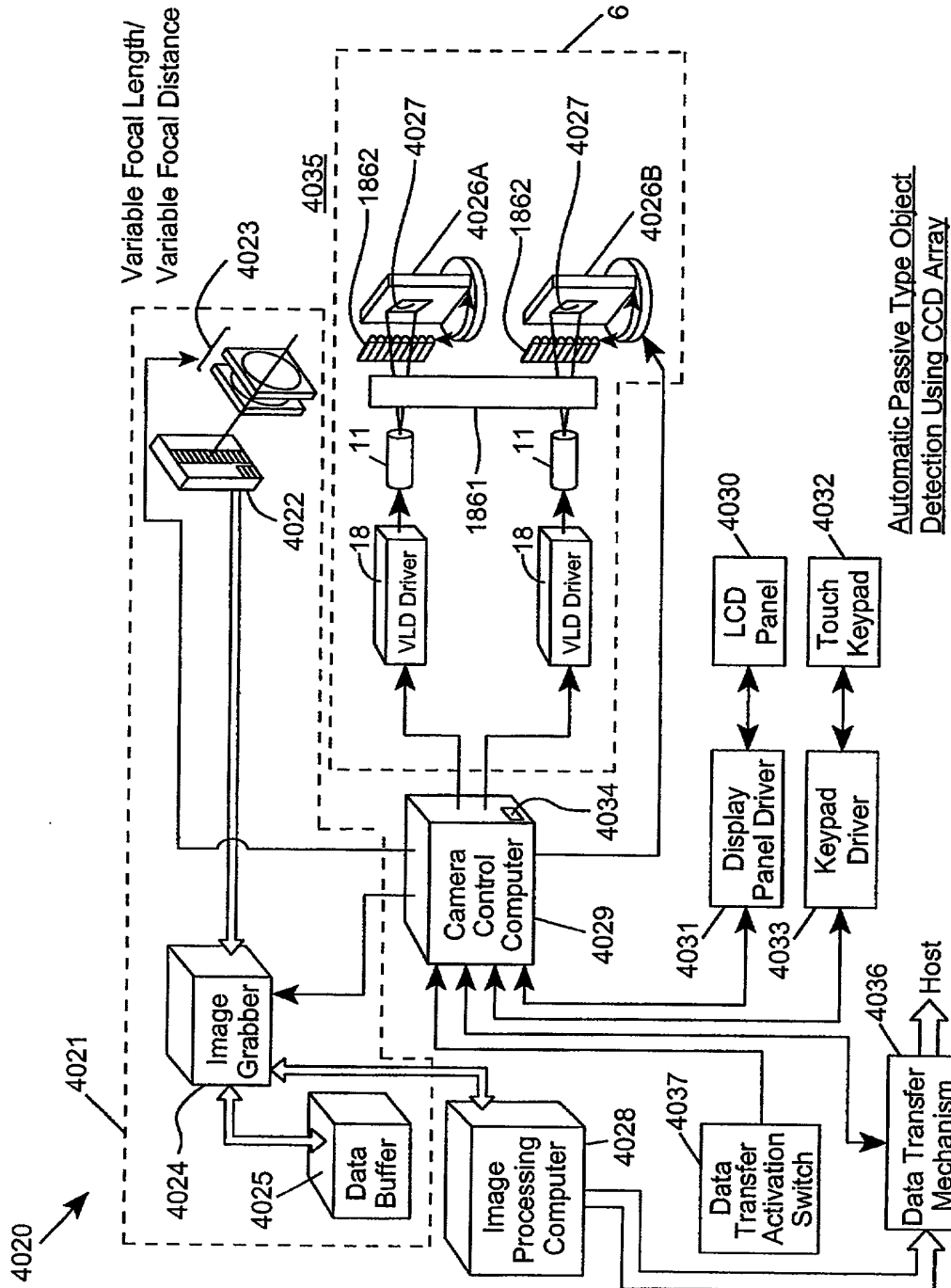


FIG. 53C4



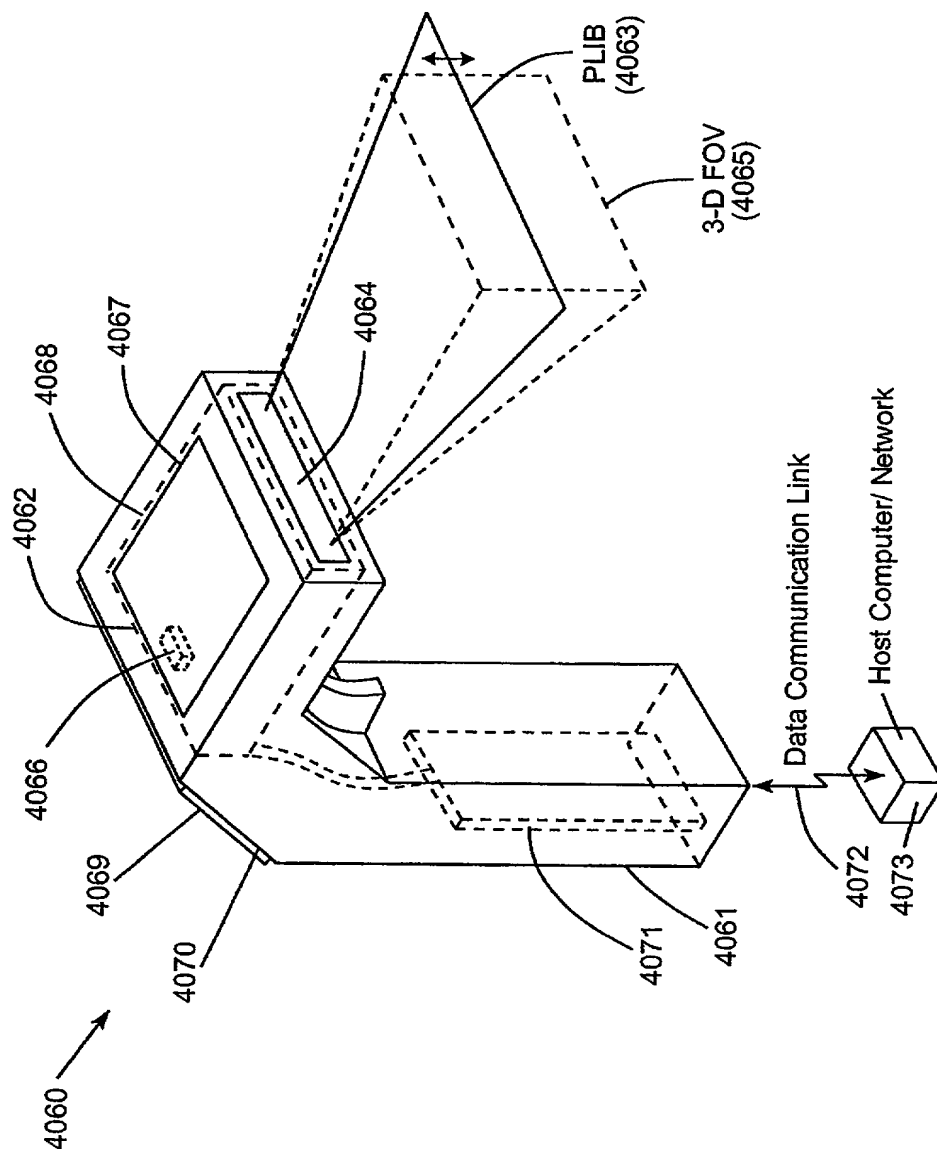
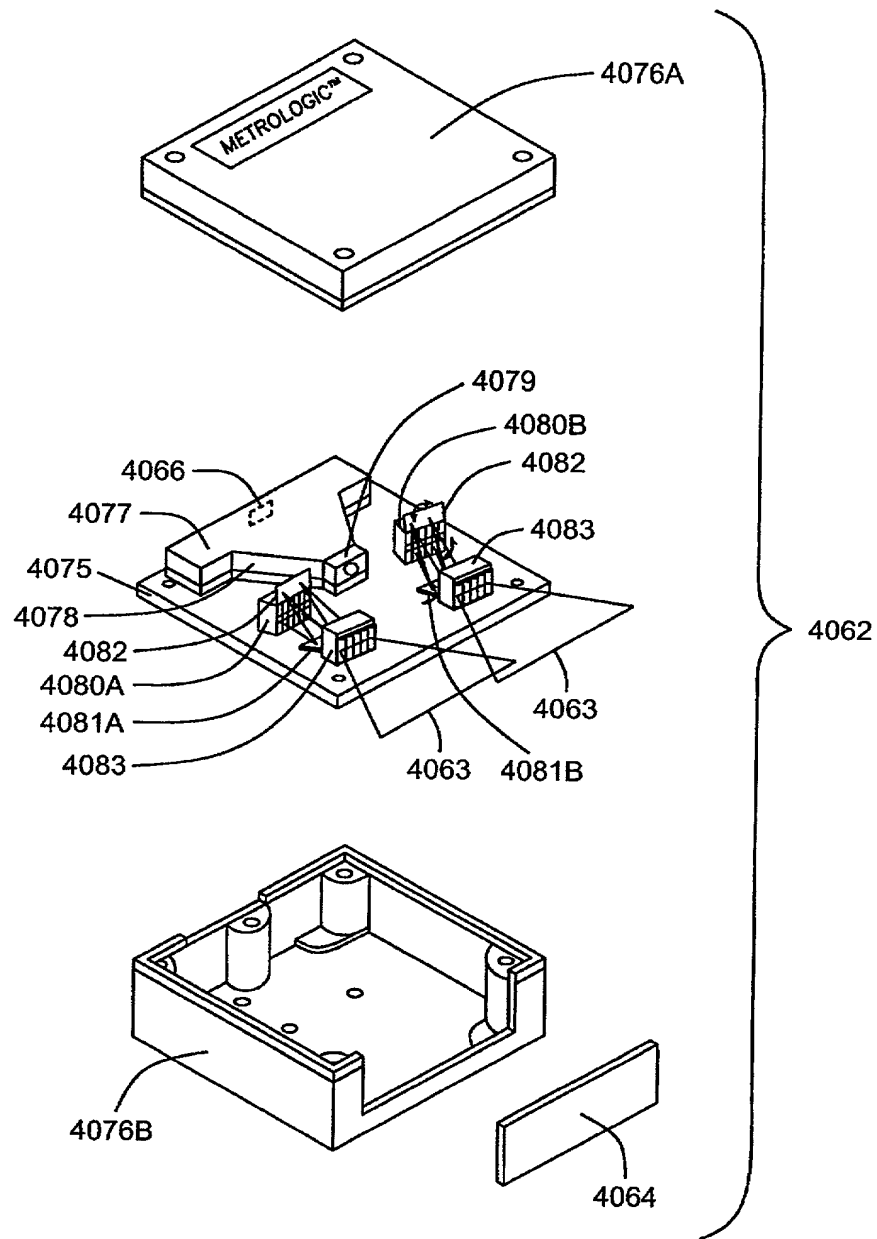


FIG. 54A



202180 0112001



(Dual Mirrors)
Fig. 115A-5D

FIG. 54B



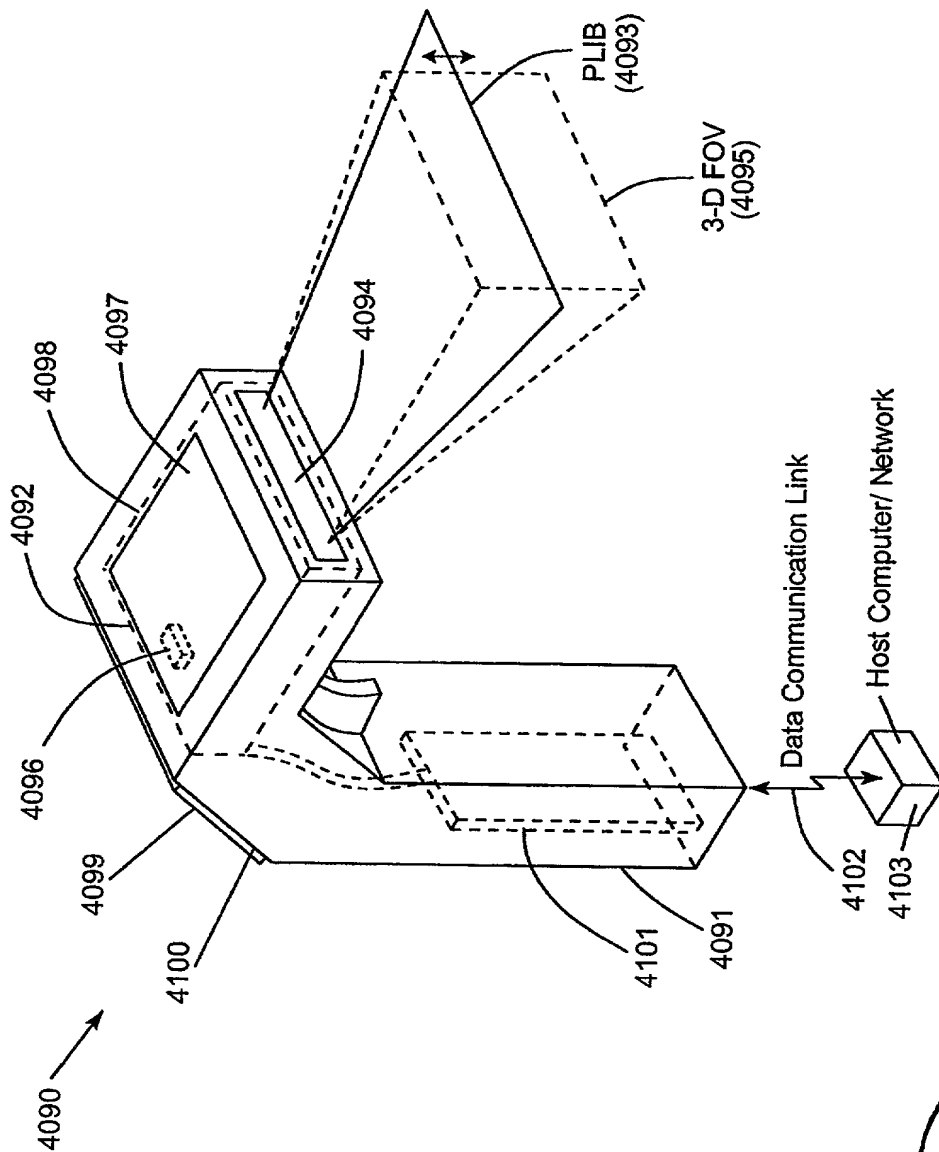
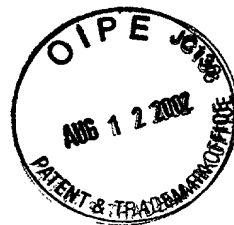
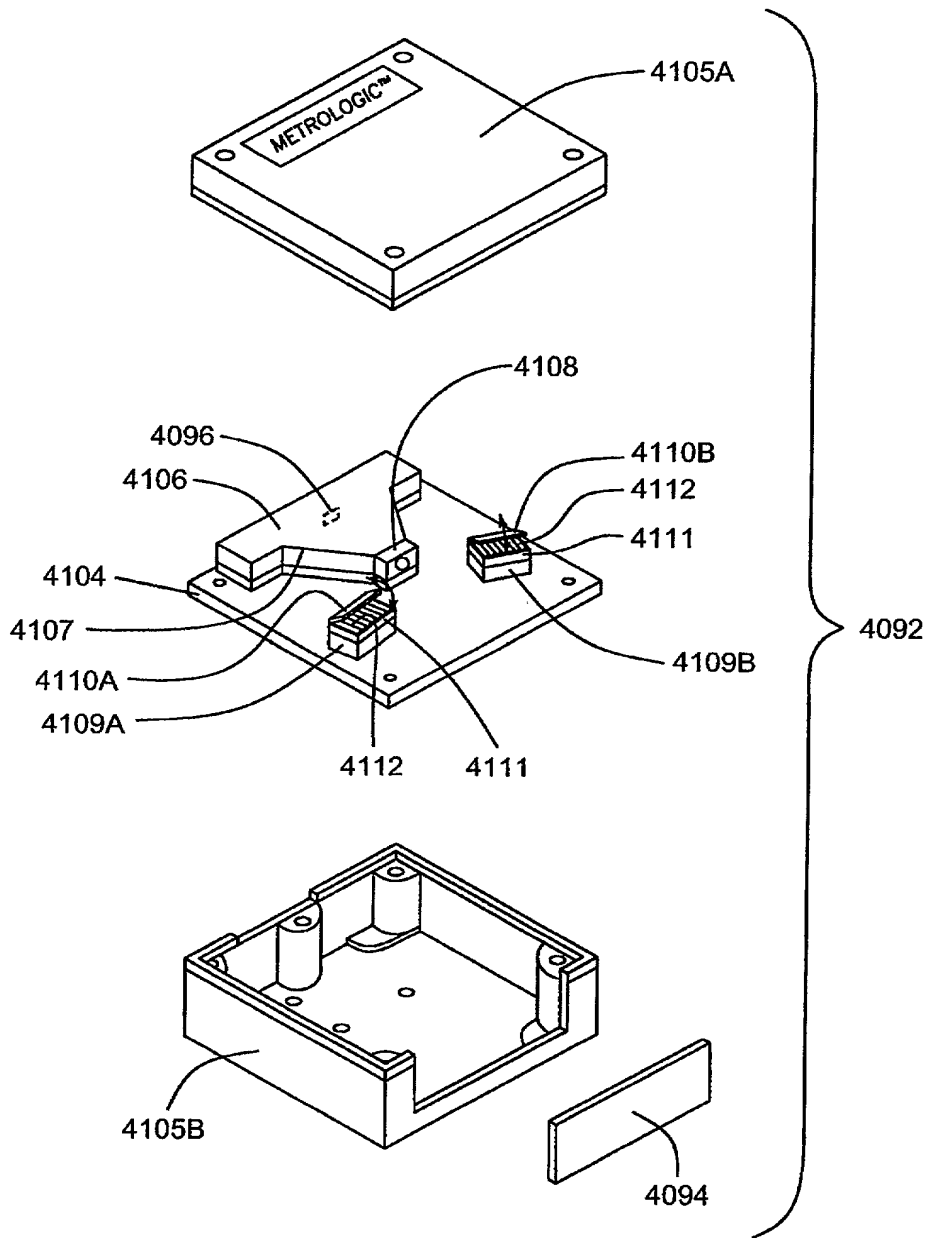


FIG. 55A



2021201 01129001



Bragg Cell
Fig. 116A-6B

FIG. 55B



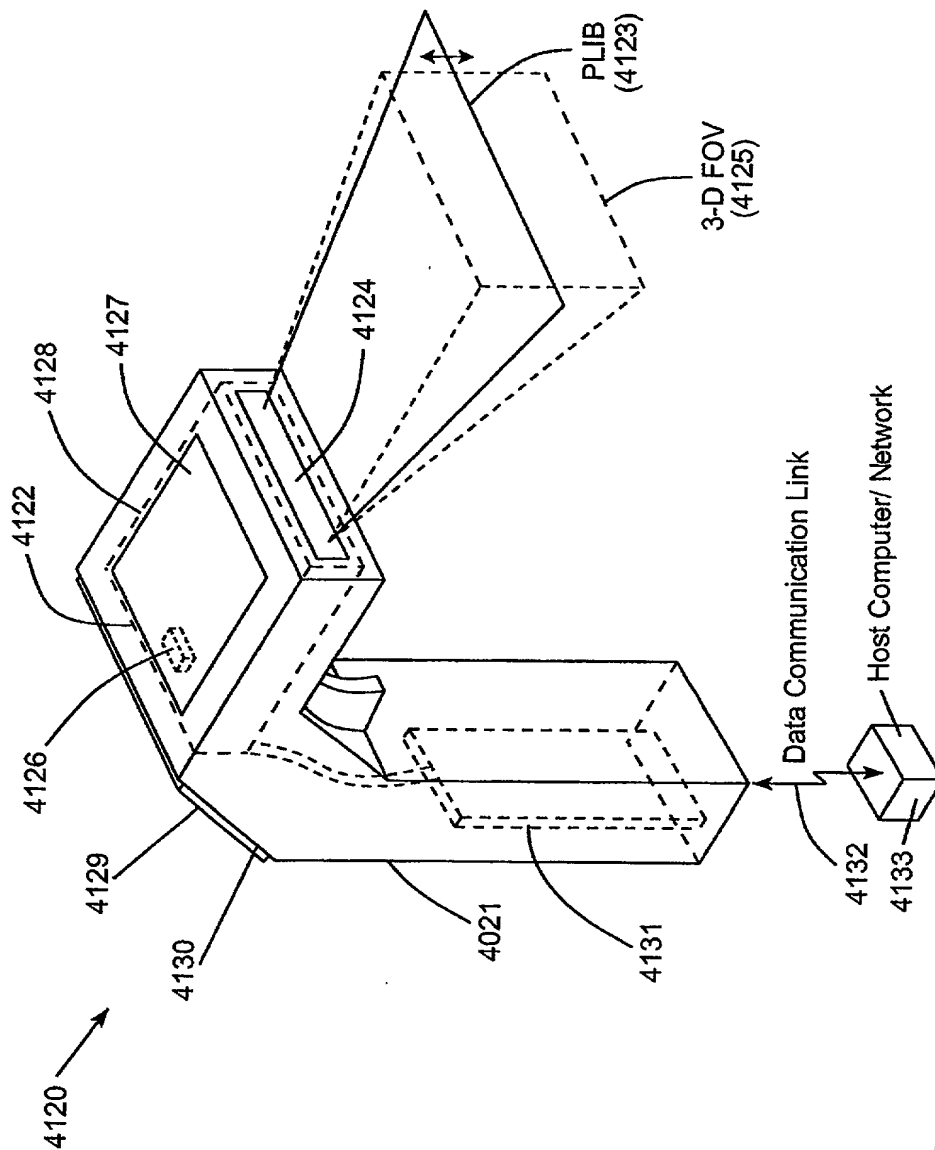
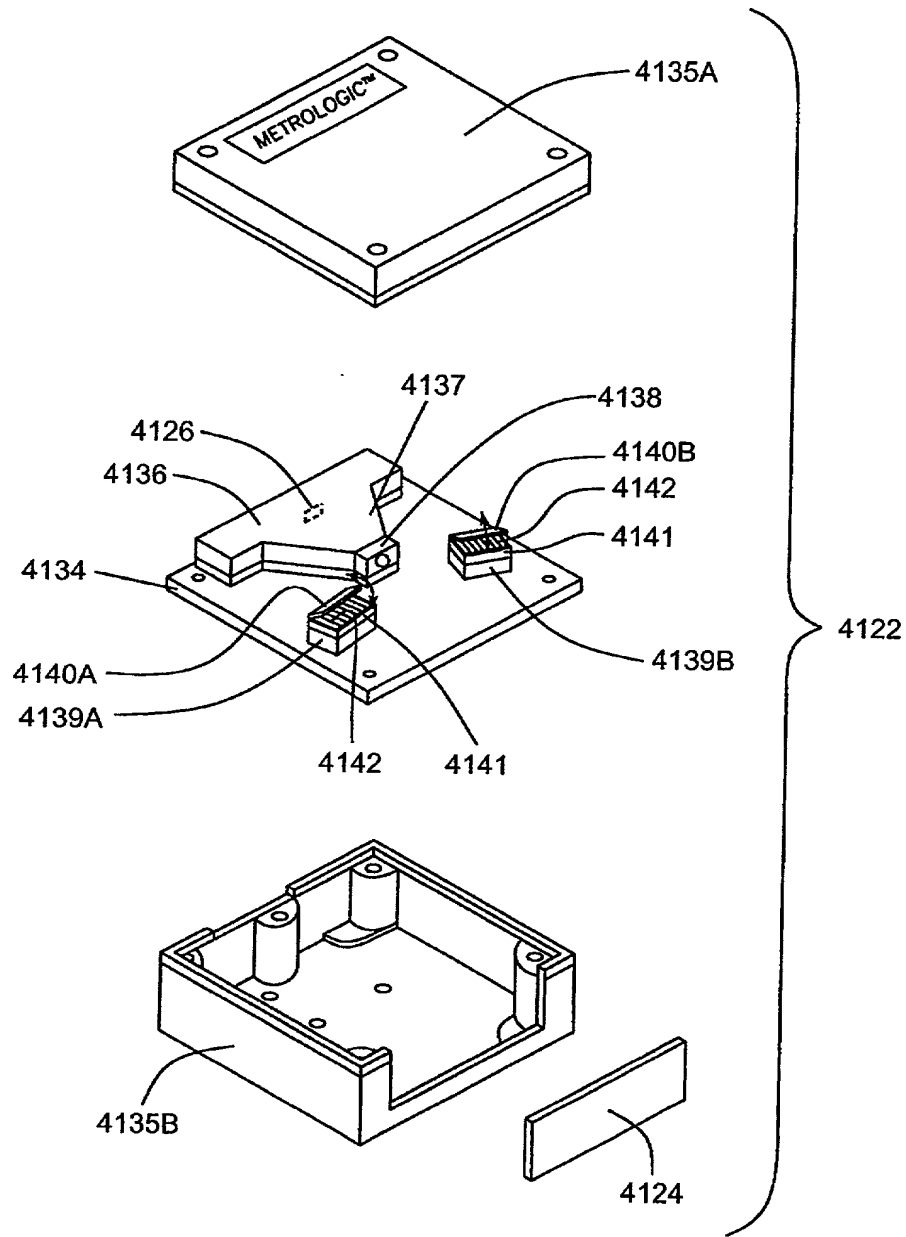


FIG. 56A



20210801 04123001



DM
Fig. 117A-7B

FIG. 56B



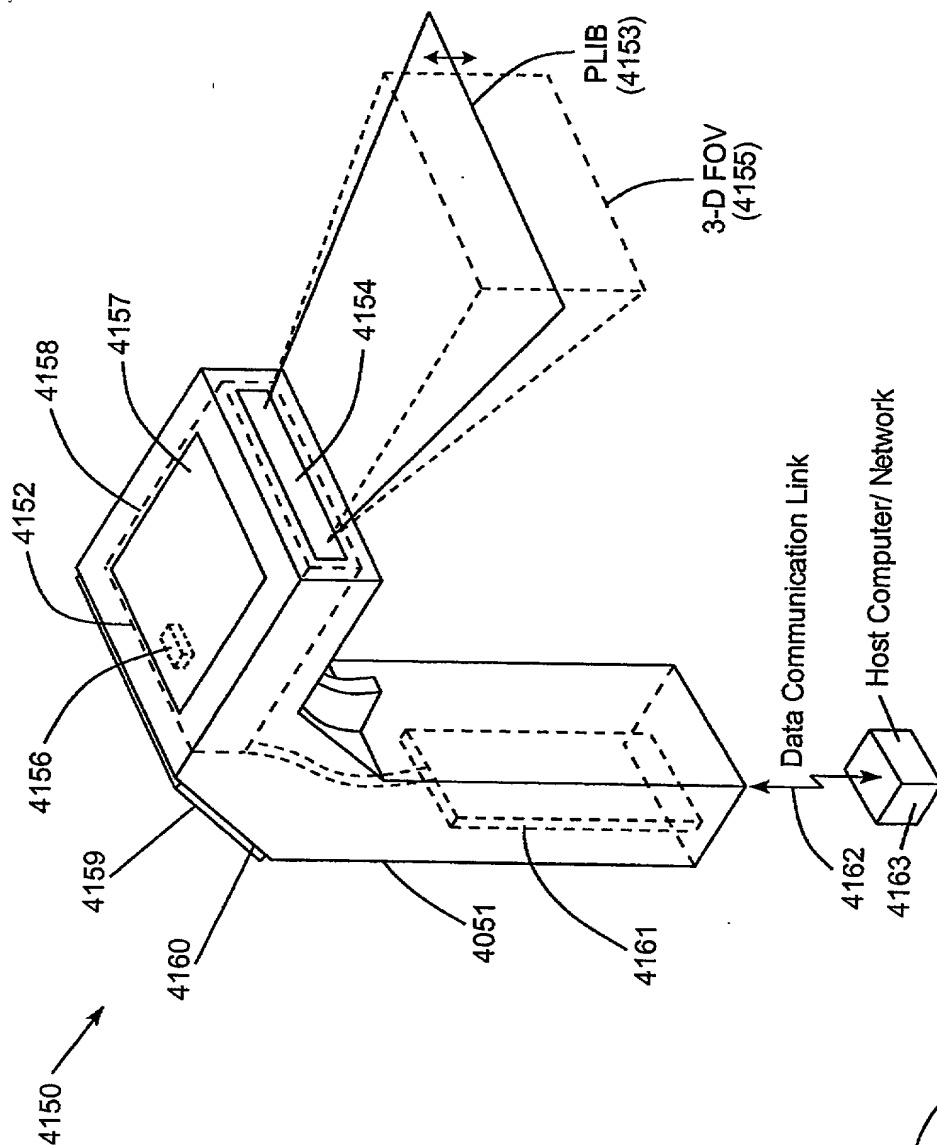
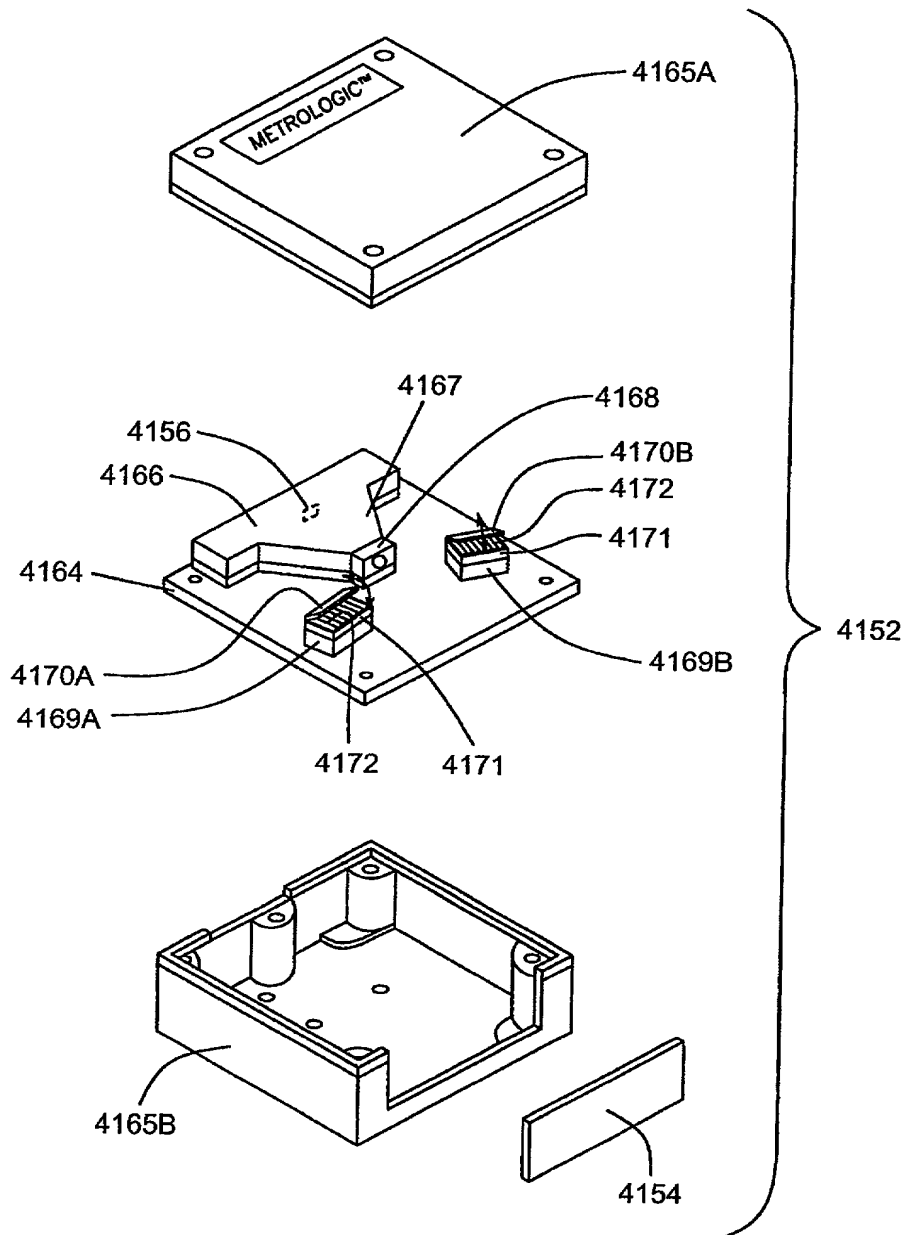


FIG. 57A



202180" 04129001



Phase Only LCD
PM Panel

Fig. 118F-8G

FIG. 57B



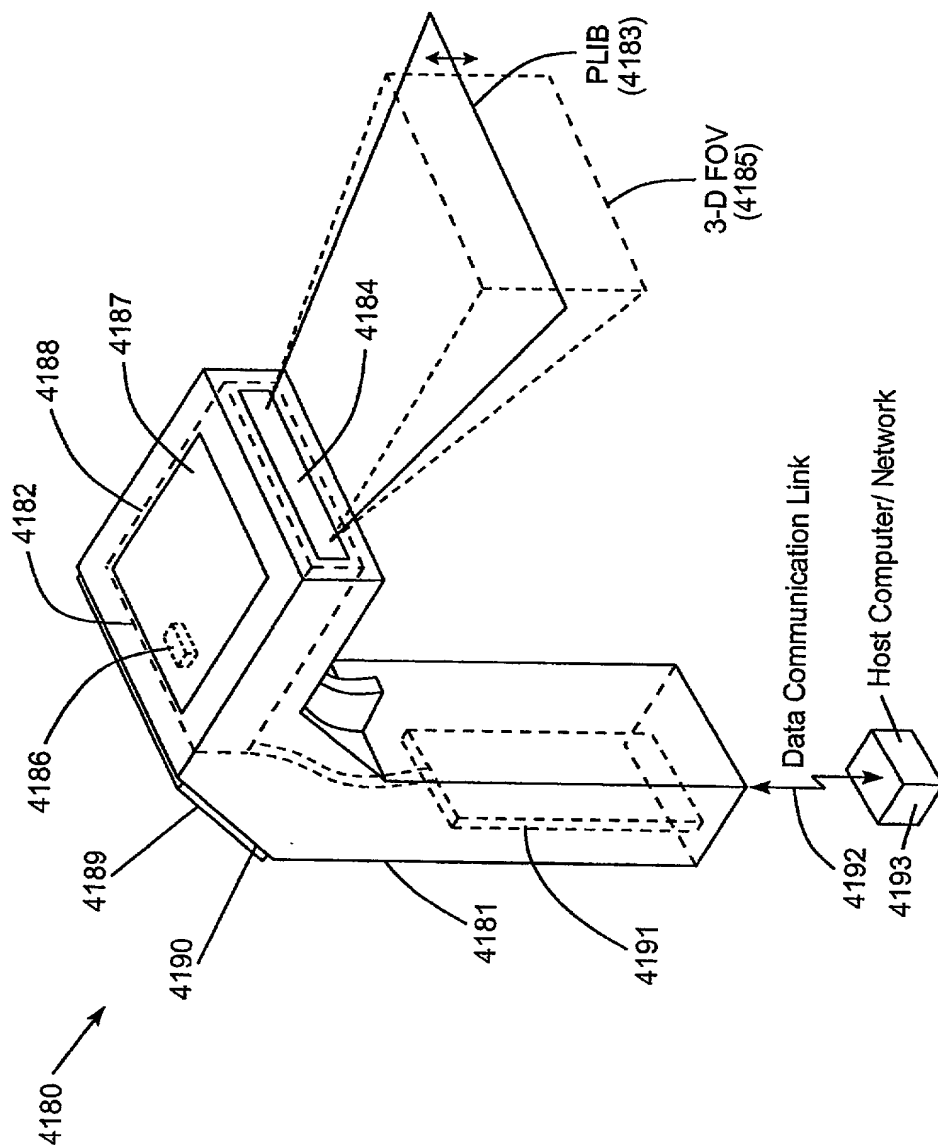
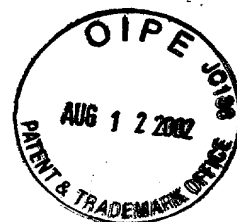
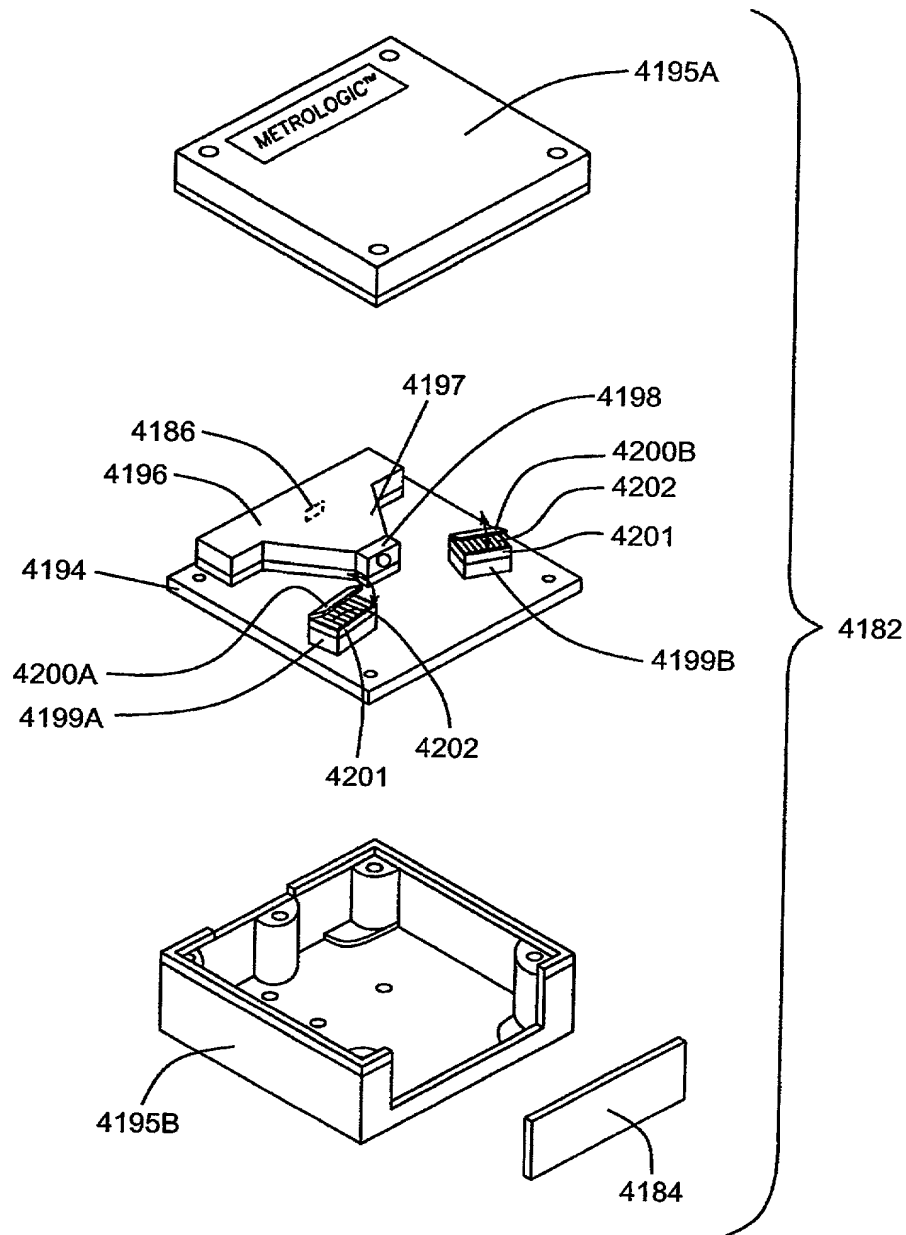


FIG. 58A



20212001 041123001



HS Optical Shutter
Fig. 1114A-14B

FIG. 58B



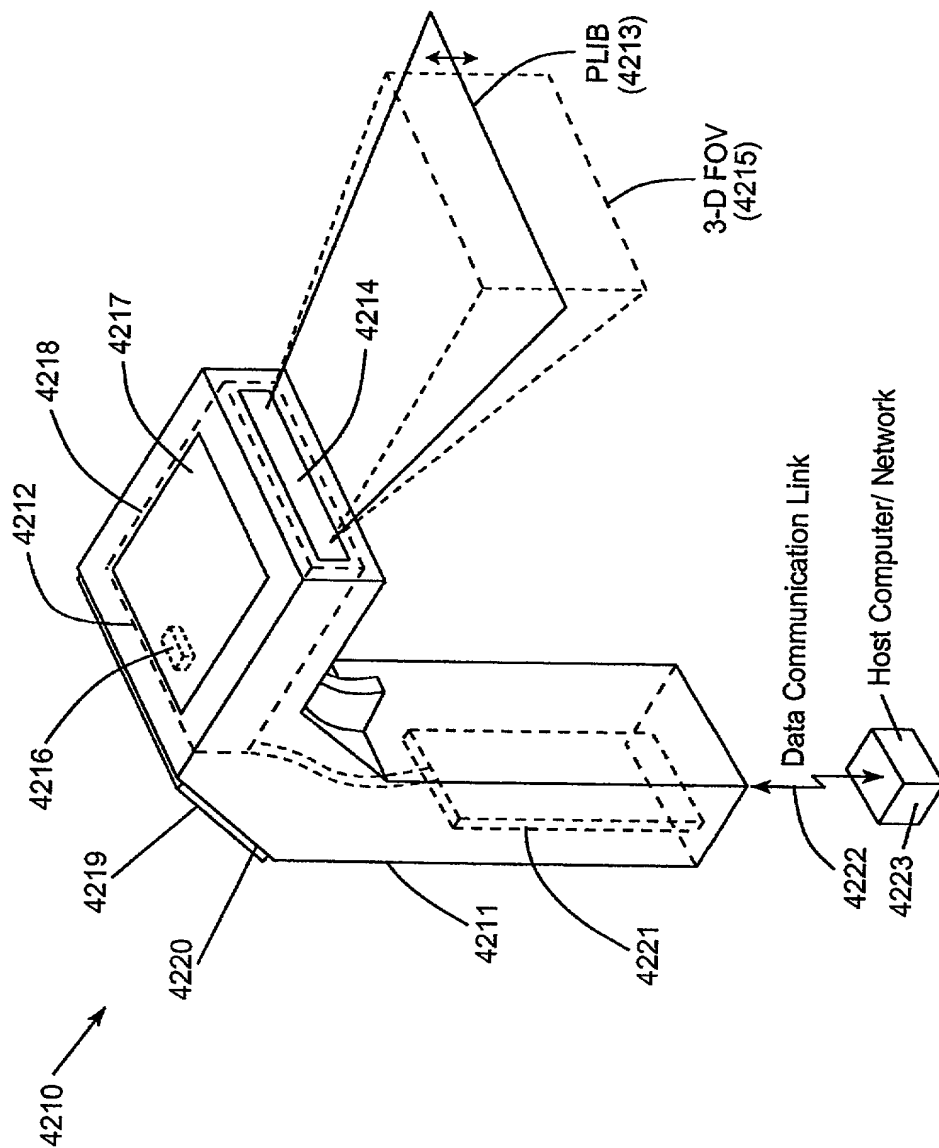
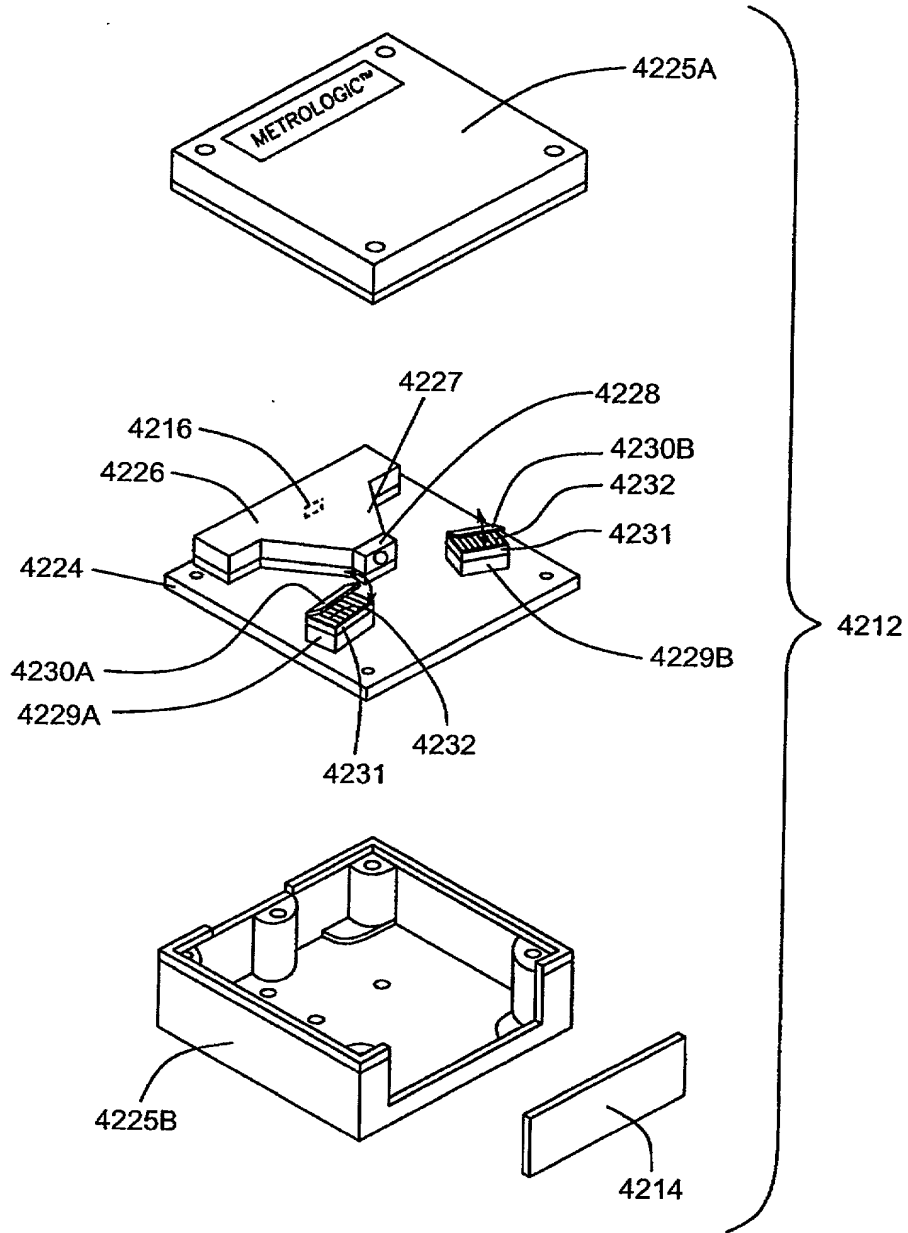


FIG. 59A



202180-04129001



MLLD

Fig. 1115A-15B

FIG. 59B



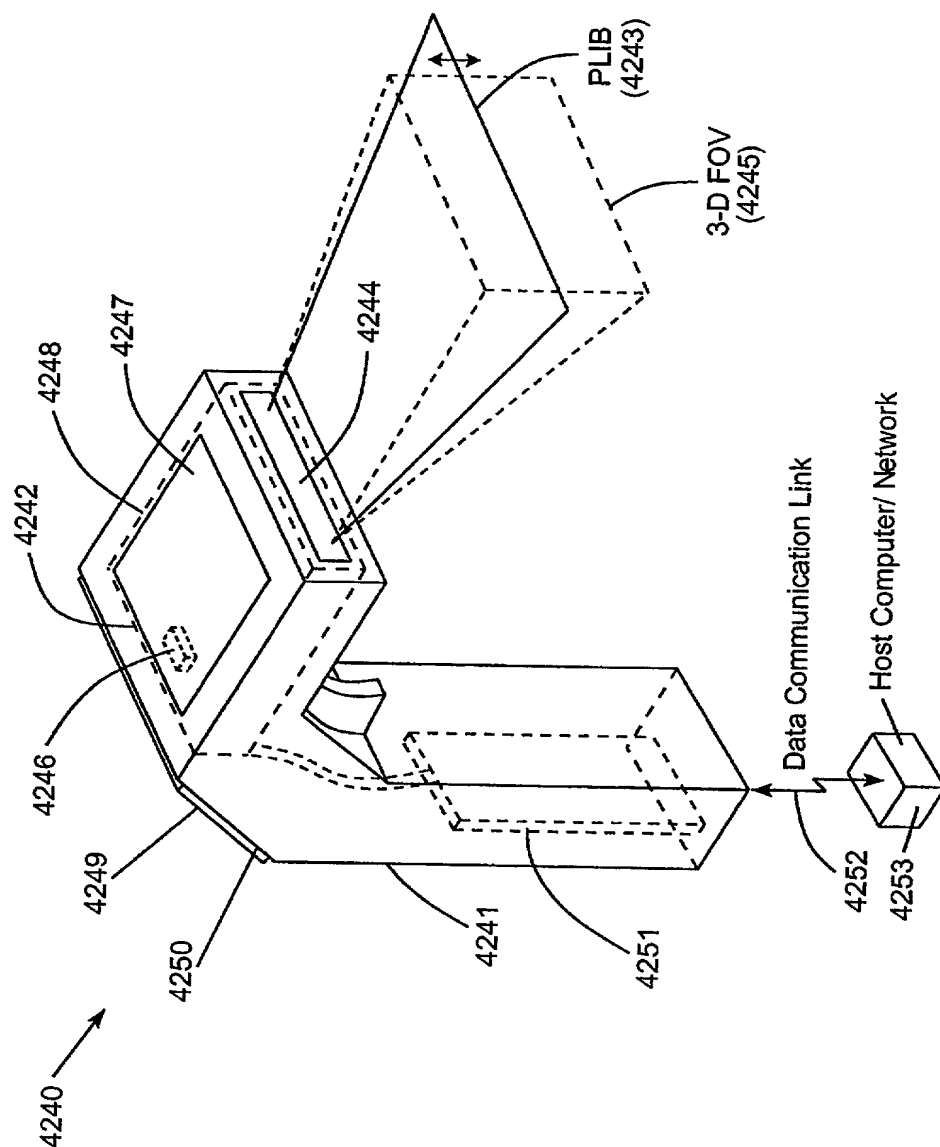
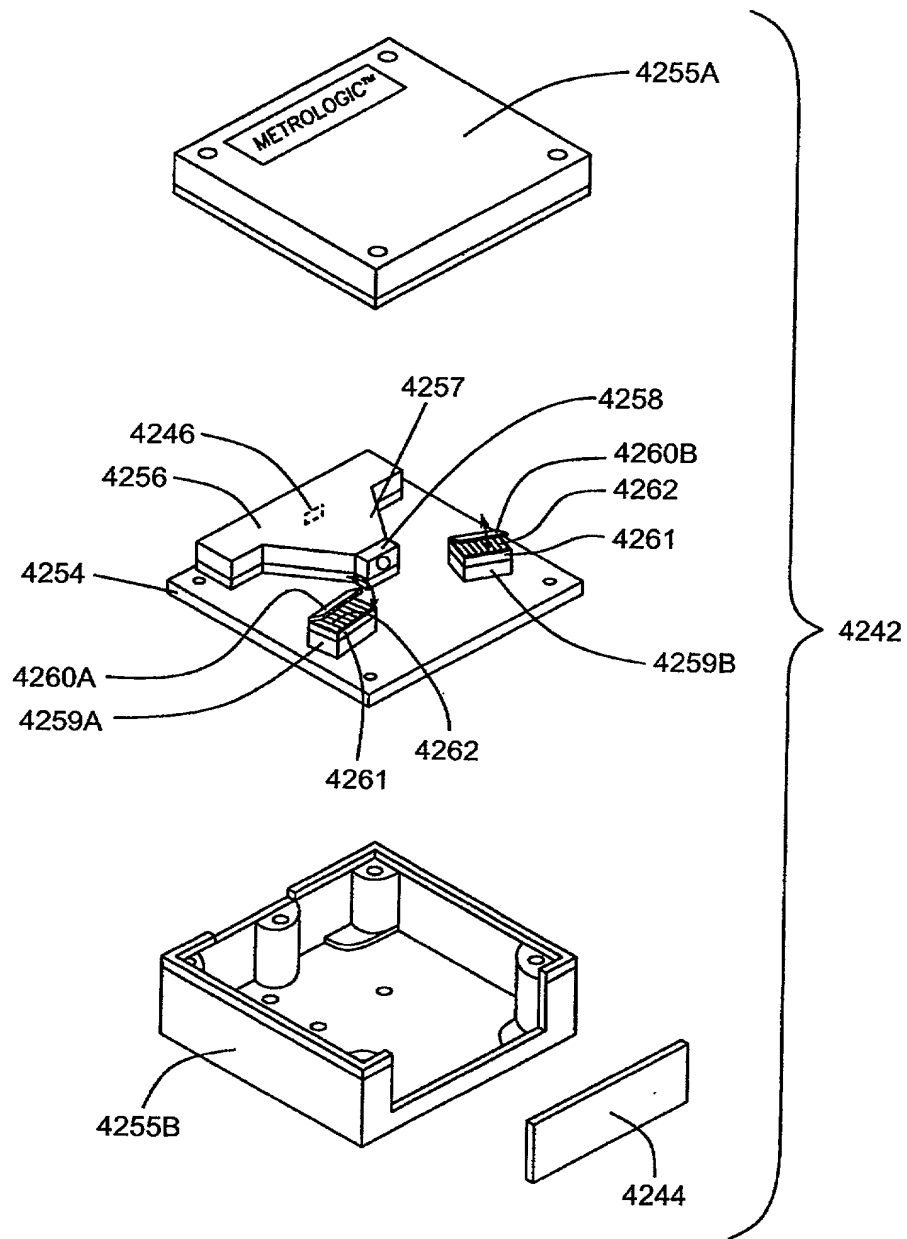


FIG. 60A



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Etalon (Temp. Phase Mod.)

Fig. 1117A-17B

FIG. 60B



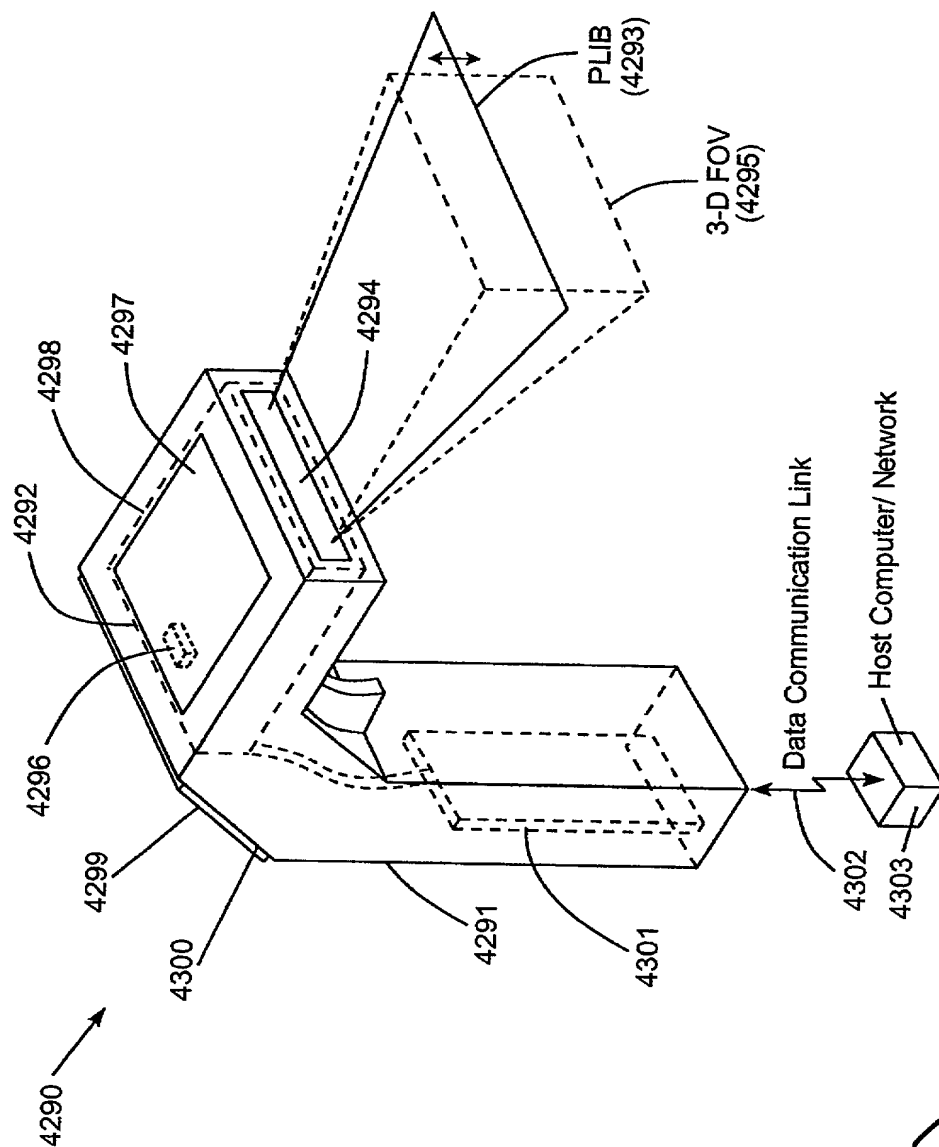
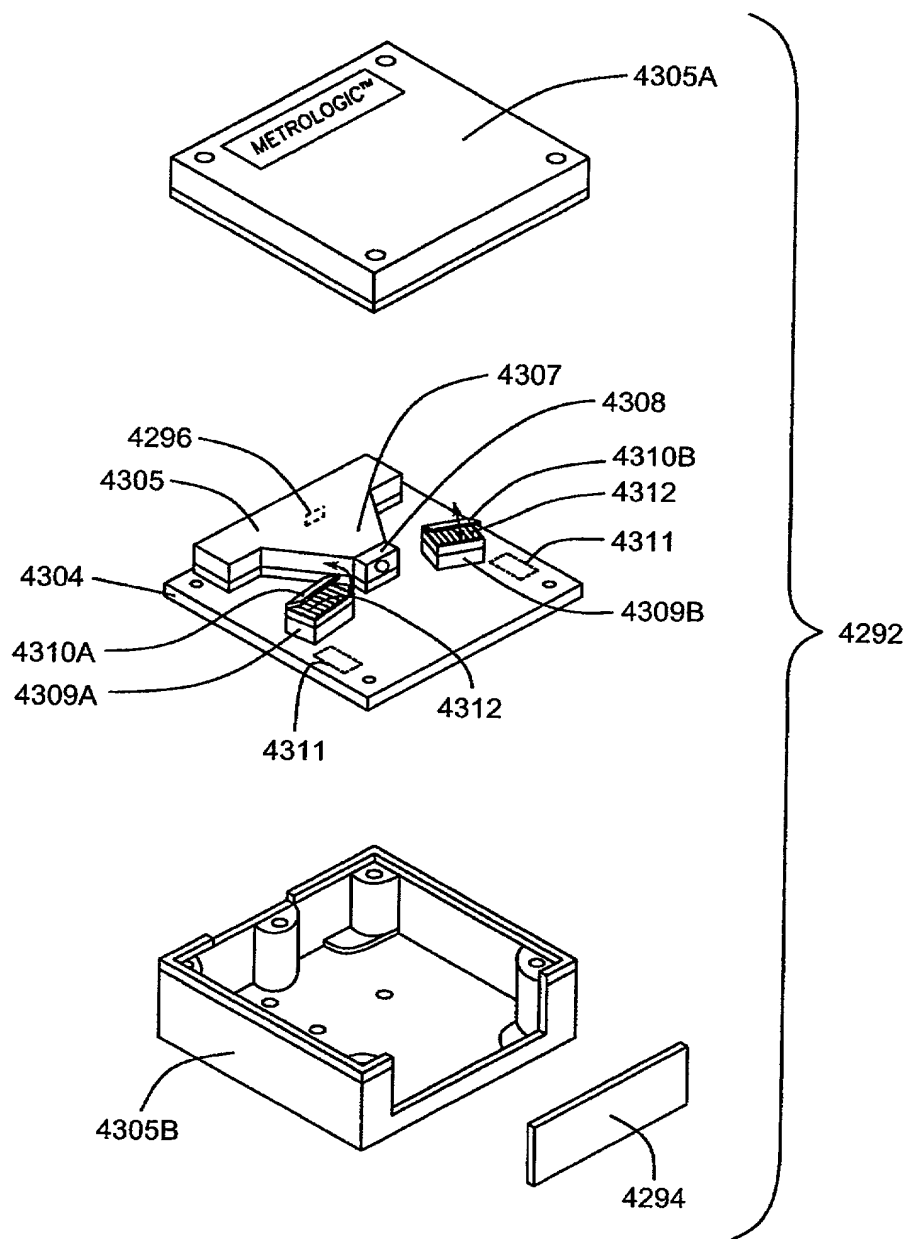


FIG. 61A



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Mode Hopping
Fig. 1119A-19B

FIG. 61B



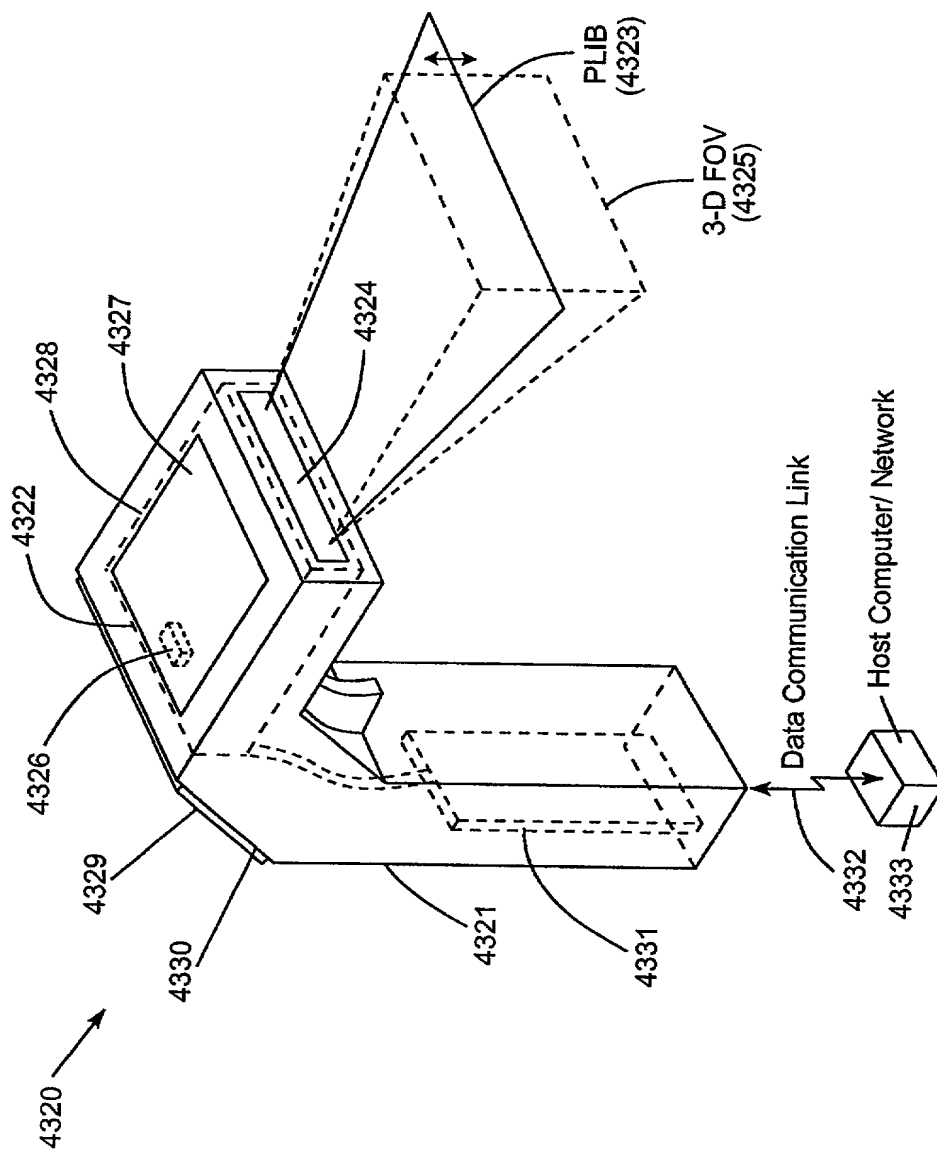
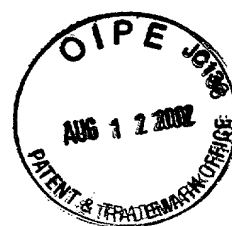
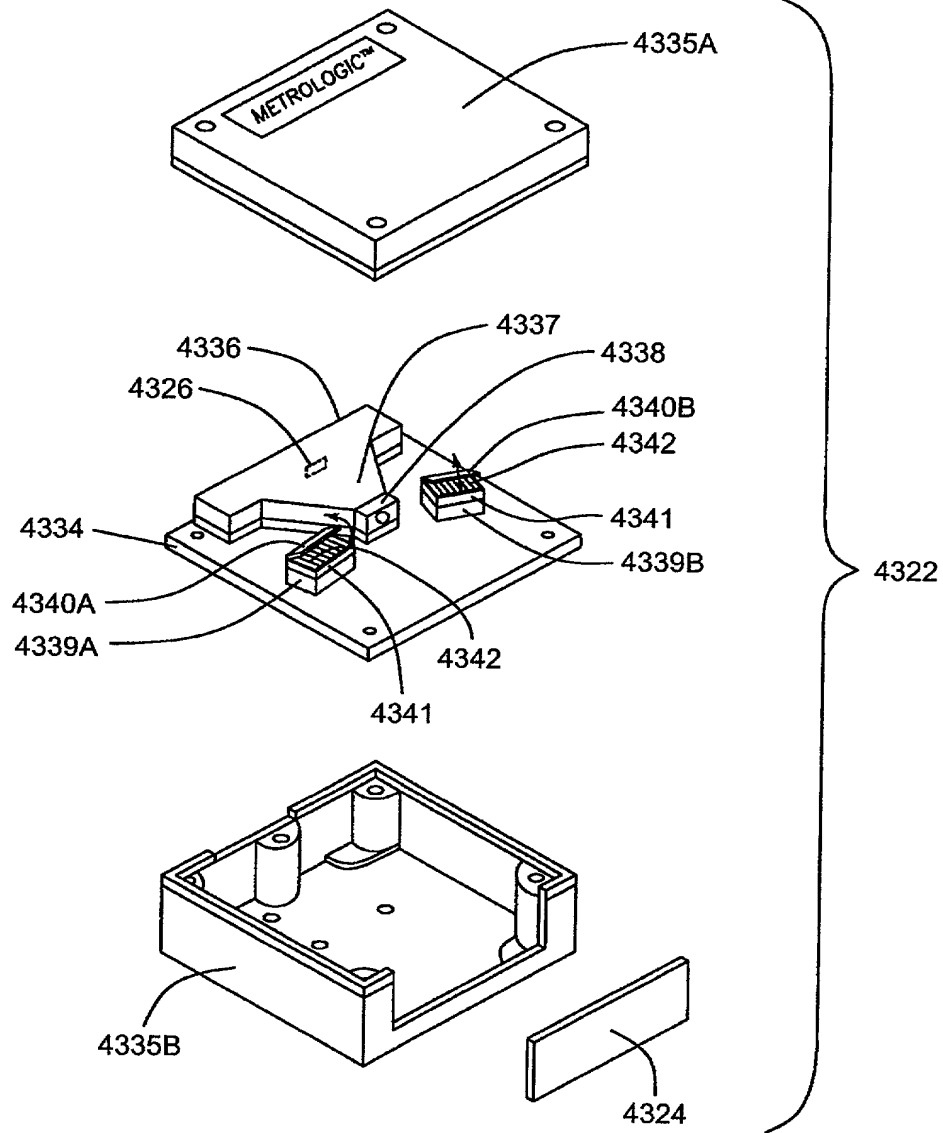


FIG. 62A



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Micro-oscillating
Spatial Intensity
Modulation Panels
Fig. 1121A-21D

FIG. 62B



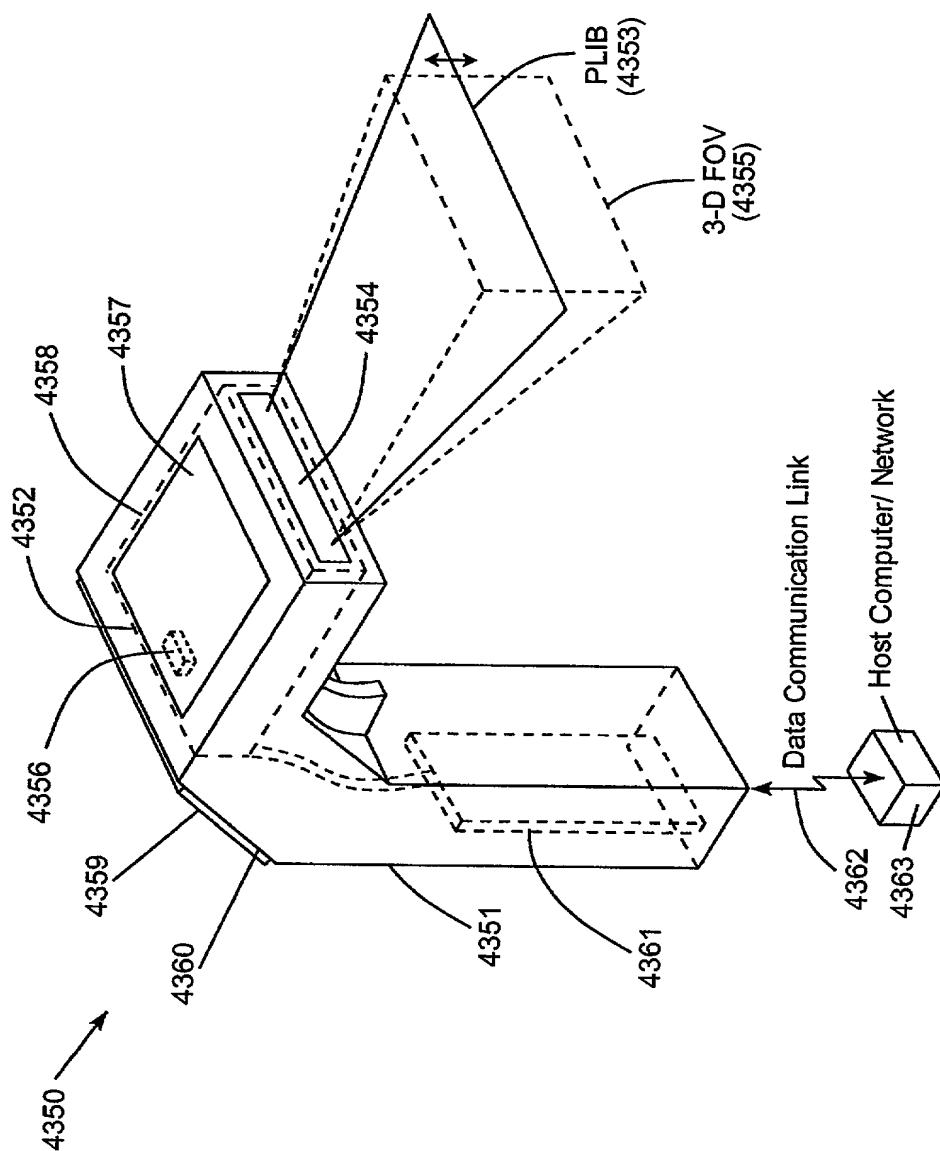
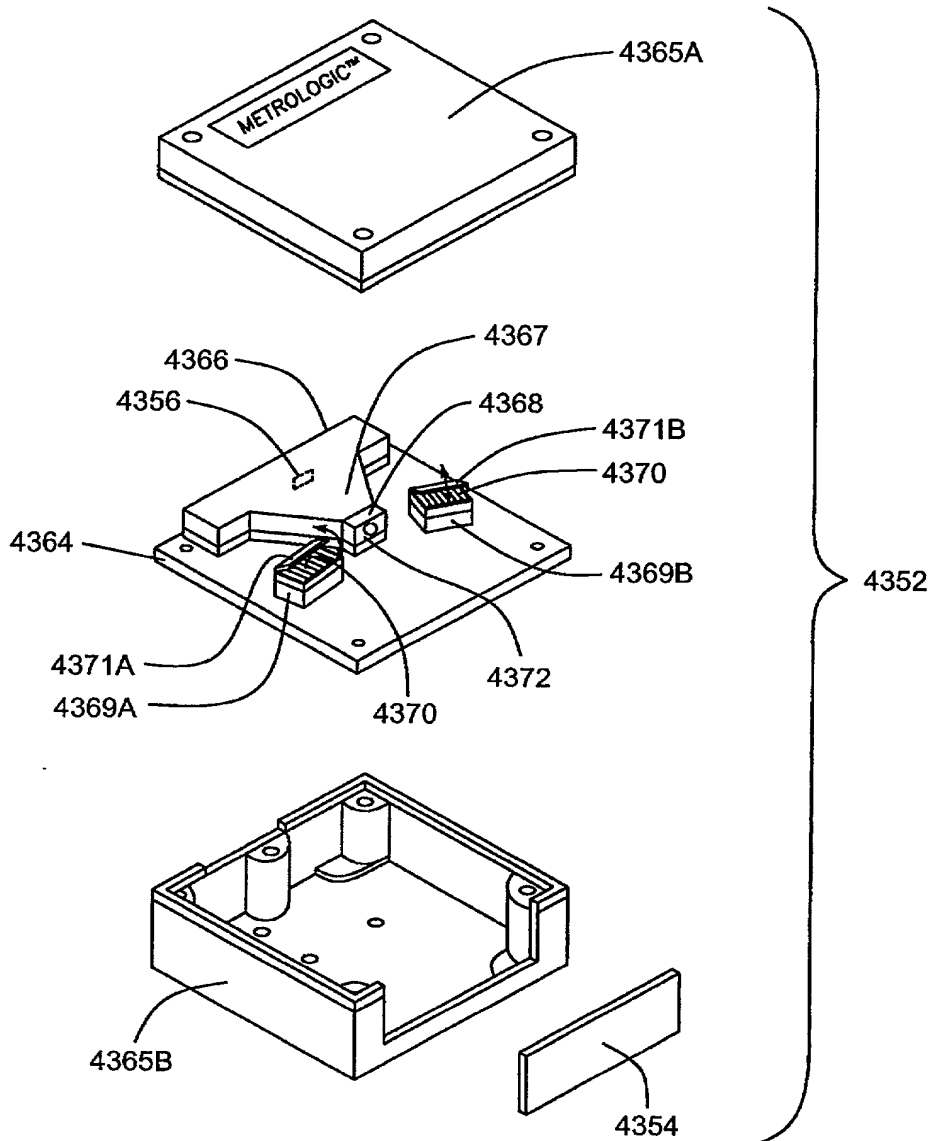


FIG. 63A



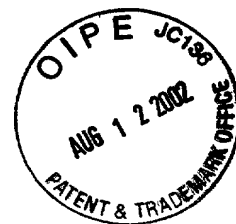
202180" 041 29001



EO or Mechanically
Rotating Iris

Fig. 1123A-23B

FIG. 63B



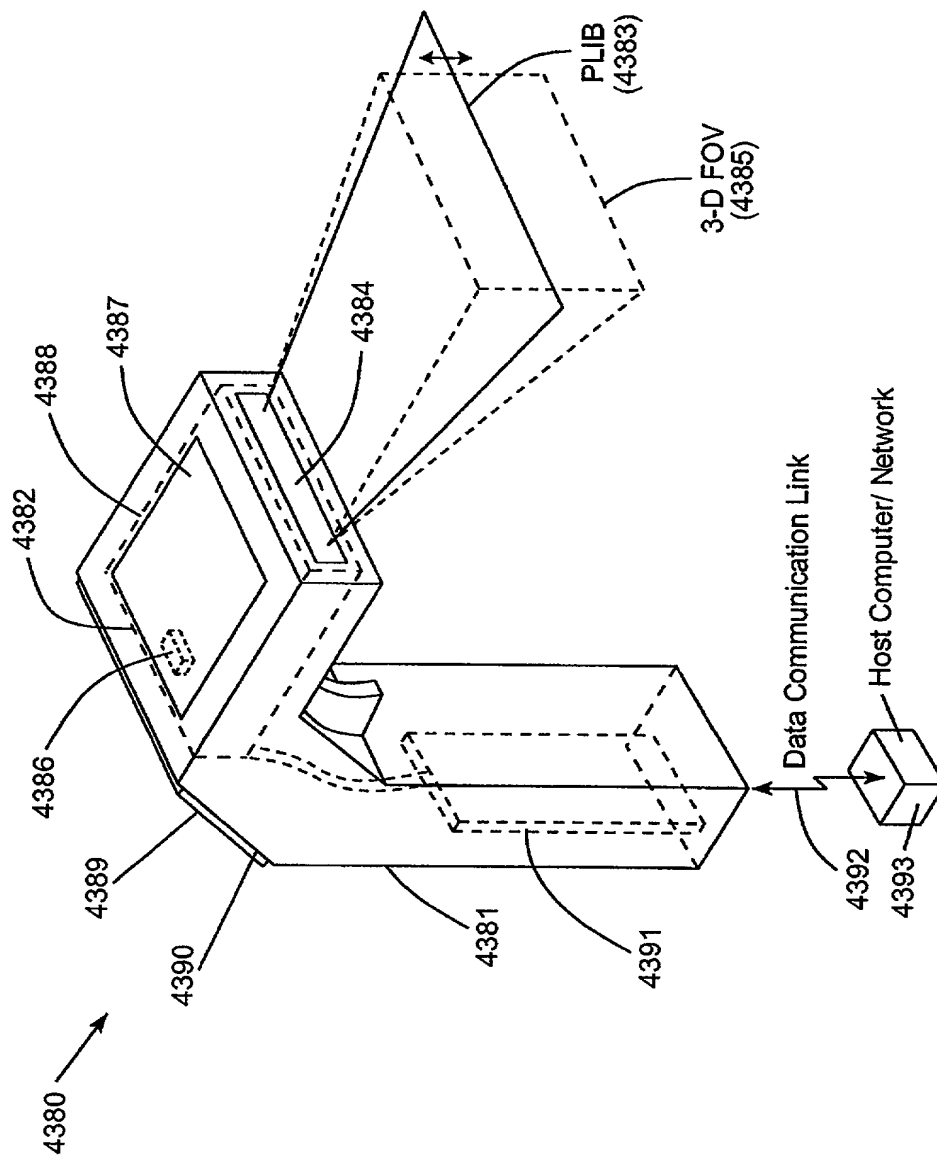
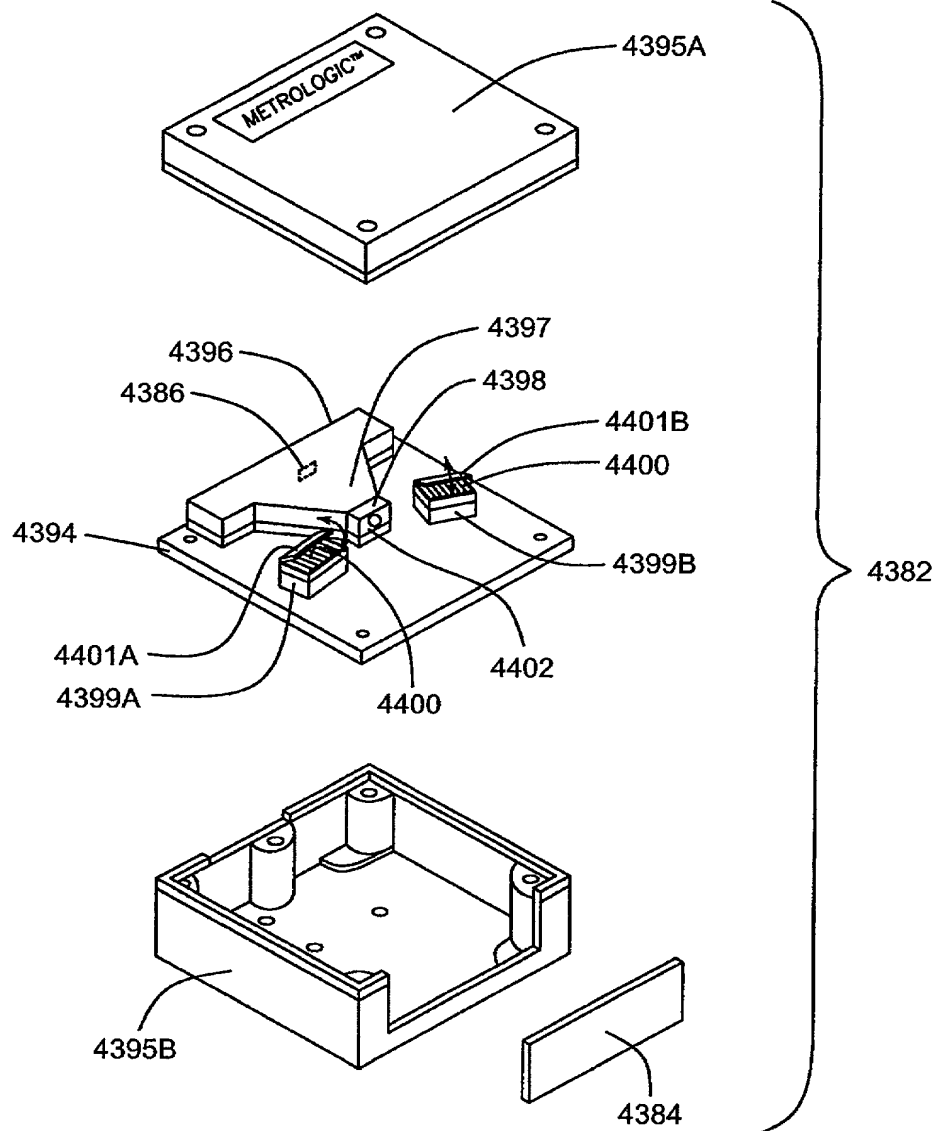


FIG. 64A



20212201 01729001



E-optical Shutter
Before IFD Lens
Fig. 1124A

FIG. 64B



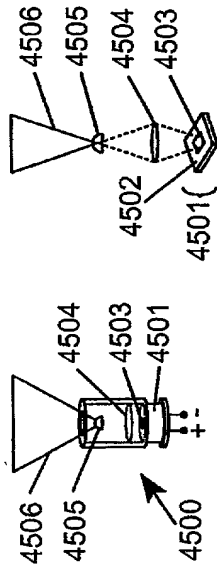


FIG. 65A

FIG. 65B

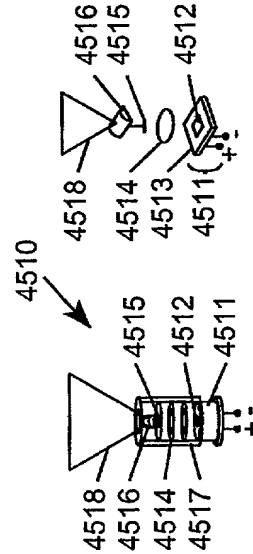


FIG. 66A

FIG. 66B

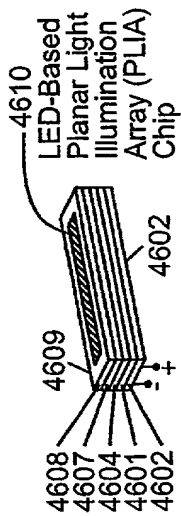


FIG. 67A

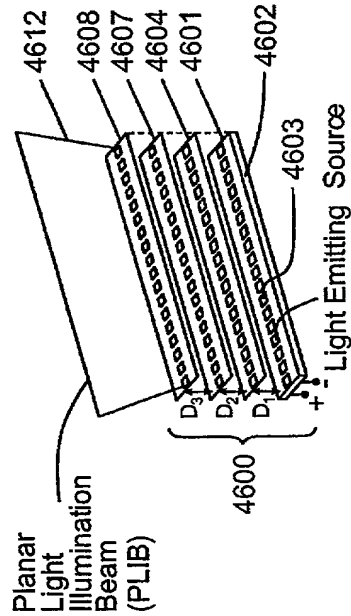


FIG. 67B

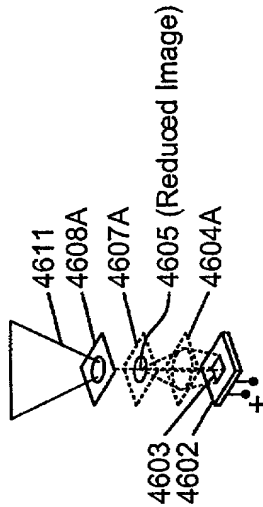


FIG. 67C

